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ABSTRACT

The Design of Training Systems (DOTS) project was initiated by the Department of Defense (DOD) to develop tools for the effective management of military training organizations. Volume 3 contains the model and data base program descriptions and operating procedures designed for phase 2 of the project. Flow charts and program listings for the models, the interface programs necessary to initialize and maintain the data base to transfer data to the models, and the data base applications programs are included. (Author/DGC)

TAEG

TRAINING
ANALYSIS
AND
EVALUATION
GROUP

TAEG REPORT
NO. 12-2

DESIGN OF TRAINING SYSTEMS
PHASE II REPORT, Volume III
MODEL PROGRAM DESCRIPTIONS AND OPERATING PROCEDURES

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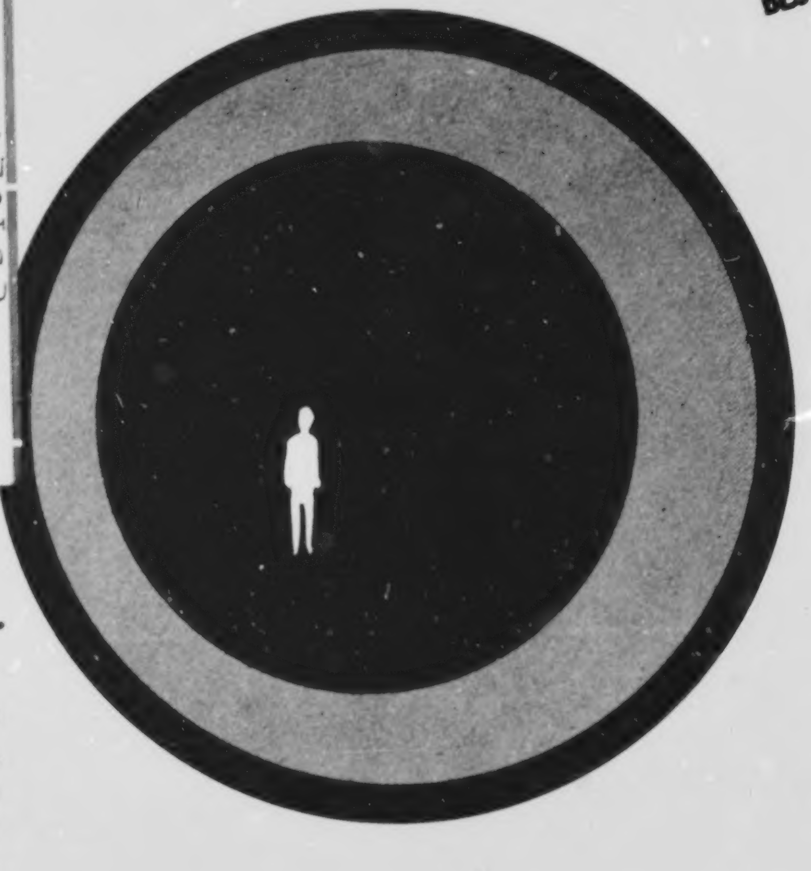

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SEPTEMBER 1974

TRAINING ANALYSIS AND EVALUATION GROUP
ORLANDO, FLORIDA 32813

Technical Report: TAEG REPORT N

DESIGN OF TRAINING SYSTEMS

PHASE II REPORT

ABSTRACT

This report consists of three volumes: Volume I presents an overview of the activities that comprised the design and development effort for the three Design of Training Systems computer-based models, a description of the validation process, and the long-range implications of the development of an operational system of DOTS models.

Volume II presents a detailed description of the System Capabilities/Requirements and Resources model, the Educational Technology Evaluation model, and the Training Process Flow model. Model logic design, input/output parameters, and data base communications are discussed at a level which allows an analytical evaluation of each model's design. In addition, Level I validation scenarios are presented in sufficient detail to allow their duplication if desired.

Volume III contains the model and data base program descriptions and operating procedures. Flow charts and program listings for the models, interface programs, and the data base applications programs are presented in appropriate sections.

The results of Phase II indicate that the selected modeling applications are feasible. The models' validation demonstrated response to realistic system variable parameters. It was concluded that the system of DOTS models is implementable and will indeed represent a significant training cost savings.

The DOTS Phase II design and development tasks were performed by IBM Corporation for the Training Analysis and Evaluation Group, Orlando, Florida (Contract No. N61339-73-C-0097).

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SECTION I

INTRODUCTION

PURPOSE

Volume III contains the information and instructions required for preparation of input data and the actual operation of the three models. It also contains a detailed description of the DOTS Data Base. Program descriptions are provided for the models, and the applications and interface programs necessary to initialize and maintain the data base to transfer data to the models. Section IV contains a special subsection for the statistical analysis associated with the design and development of the Training Process Flow model.

ORGANIZATION OF THIS VOLUME

Volume III is organized into sections for each model in the DOTS system; i.e., the System Capabilities/Requirements and Resources model, the Educational Technology Evaluation model, and the Training Process Flow model as well as the DOTS Data Base. Each model section follows the same format, as did those in Volume II, to allow the reader to make comparisons of similar aspects of the operation of the three models and the data base.

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SECTION II

SYSTEM CAPABILITIES/REQUIREMENTS AND RESOURCES MODEL

PROGRAM DESCRIPTION

The SCRR model program flow is depicted in Figure II- 1. Three of the seven programs shown in the flow - File Unload, Select, and File Restore - are primarily data base restructuring programs. These programs transfer selected data from both the course and instructor files in the master DOTS data base to the scratch SCRR data base. Detailed descriptions for these three programs are provided in the data base section in Volume III. The four programs which will be described in this section are:

a. SCRR Interface - Part I

b. SCRR Interface - Part II

c. SCRR Model - MPSX

d. SCRR Output Format Program.

These programs access the scratch SCRR data base, formulate the linear programming objective function and constraint equations, reformat the LP problem to meet MPSX data input requirements, perform the linear programming and sensitivity analysis calculations, and reformat the MPSX output to conform to the SCRR model functional requirements.

The SCRR interface and output programs are written in PL/1. To access the scratch SCRR data base, the interface program utilizes several DL/1 routines. A brief description of DL/1 can be found in the data base section in Volume III. The SCRR model utilizes Mathematical Programming System Extended (MPSX), an IBM program product.[1] MPSX is written in OS assembler language. For additional information concerning MPSX data management methods, operating system requirements, computational precision, machine configuration, and storage requirements, the reader is referred to the MPSX Program Description . Although MPSX cannot be run on non-IBM computers, most computer manufacturers provide linear programming software packages for their equipment. A machine-independent linear programming software package could not be identified.

Job control language has been designed to enable sequential processing of the four SCRR model programs. All programs and associated job control language have been written for use on an IBM 360/40 with 192K bytes of storage.

SCRR MODEL INTERFACE - SECTION I (SCRRMOD1) PROGRAM DESCRIPTION. The purpose of the SCRR model interface program is to access the specified data base,

---

[1] Mathematical Programming System - Extended (MPSX), and Generalized Upper Bounding (GUB) Program Description. Appendix L. Program Number 5734-XM4; Document Number SH20-0968-1; IBM Corporation, White Plains, New York; 1972

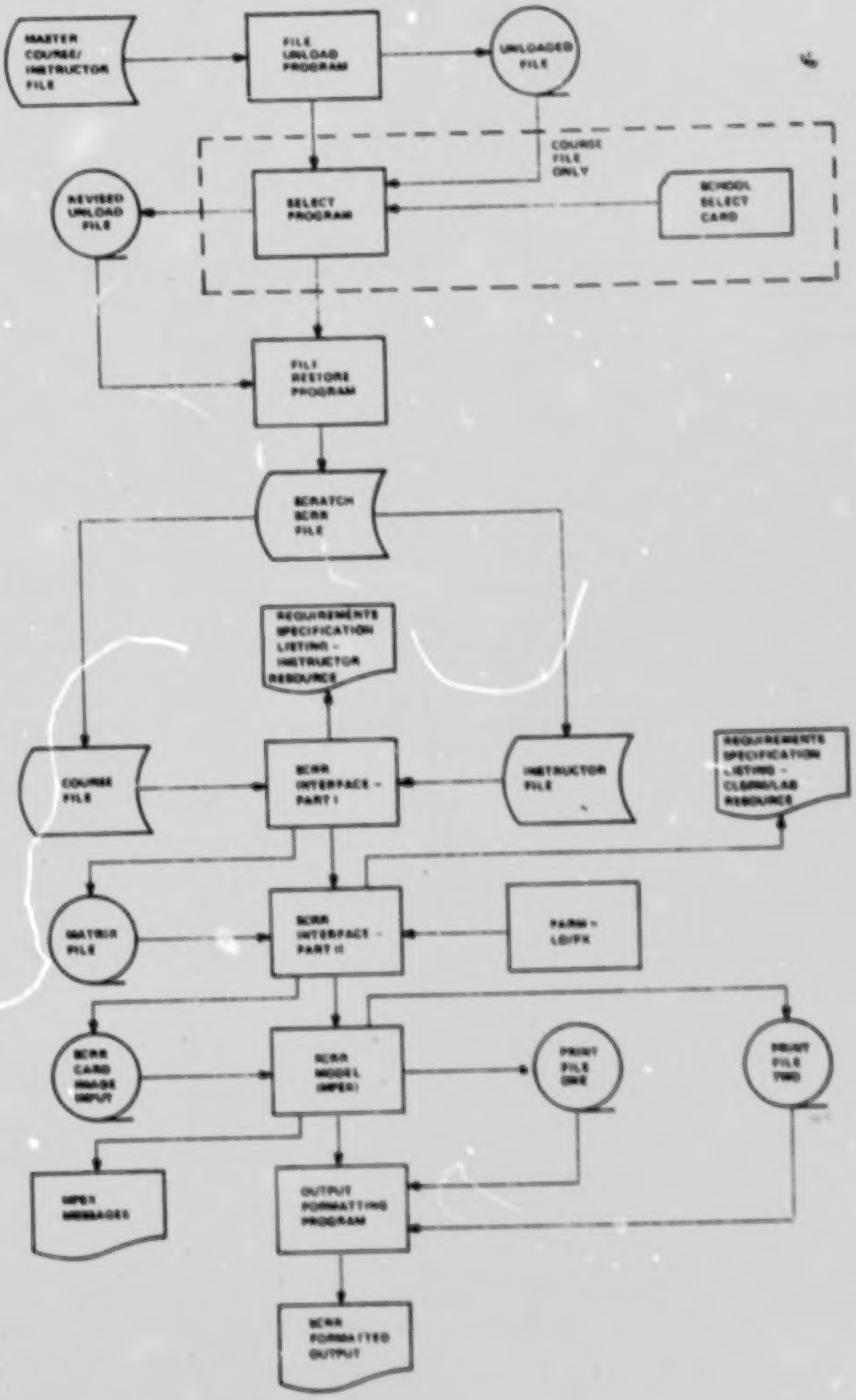
MASTER COURSE/ INSTRUCTOR FILE
FILE UNLOAD PROGRAM
UNLOADED FILE
COURSE FILE ONLY
REVISED UNLOAD FILE
SELECT PROGRAM
SCHOOL SELECT CARD
FILE RESTORE PROGRAM
SCRATCH SCRR FILE
REQUIREMENTS SPECIFICATION LISTING - INSTRUCTOR RESOURCE
COURSE FILE
SCRR INTERFACE - PART I
INSTRUCTOR FILE
REQUIREMENTS SPECIFICATION LISTING - CLASS/LAB RESOURCE
MATRIX FILE
SCRR INTERFACE - PART II
PARM - LO/PX
SCRR CARD IMAGE INPUT
SCRR MODEL (MPSX)
PRINT FILE ONE
PRINT FILE TWO
MPSX MESSAGES
OUTPUT FORMATTING PROGRAM
SCRR FORMATTED OUTPUT

FIGURE II-1 SCRR MODEL PROGRAM FLOW

formulate the linear programming objective function and constraint equations, and to reformulate the resulting LP problem to meet MPSX input data requirements. As a result of computer storage limitations, the SCRR model interface has been developed as a two program package, SCRRMOD1 and SCRRMOD2.

SCRRMOD1 is divided into two sections. Phase I establishes instructor requirements for all courses contained in the specified data base. First the program establishes a course identification (CID) vector which contains the CDP number of all courses in the data base. The length of the CID vector determines the number of columns in the instructor requirements matrix. SCRRMOD1 then performs the following functions for each element of the CID vector; i.e., CID(i).

a. Accesses the course segment data for course CID(i). Computes the number of annual convenings for course CID(i).

b. Accesses the instructor segment of CID(i).

The following functions are then performed for each instructor group associated with CID(i).

c. Builds a vector containing the identification of all instructors in the group.

d. Builds a vector of all related courses associated with the instructor group being processed.

e. Accesses the ratio segment of each course in the related course vector.

f. Computes the instructor requirement from the ratio segment data for each course in the related course vector.

g. Stores the computed instructor requirements together with matrix row/column coordinates; i.e., (n, i) where

n = instructor group number

i = CID vector index.

h. Accesses instructor file for each instructor in the instructor vector.

i. Sums availabilities for all instructors in instructor file. Stores result.

Steps a. through i. are repeated for each course in the data base.

Phase II of SCRRMOD1 establishes the classroom and laboratory requirements for each course in the data base. The following steps are performed for each course in the CID vector established in Phase I.

a. Accesses the classroom segment of the course data file.

b. Constructs a vector of all building and room numbers required by course CID(i).

c. Adds room identifications from the preceding vector to a permanent room vector, not duplicating any rooms already in the permanent vector.

d. Stores the number of hours required for each room, together with the matrix row/column coordinates; i.e., (r, i) where

r = permanent room vector index

i = CID vector index.

e. Stores room availabilities for each room in the room vector.

The output of SCRRMOD1 is the instructor segment of the Requirements Specification Listing (see output parameter description, Volume II, page II-13). The specification listing contains all the non-empty elements of the instructor requirement matrix identified by corresponding row/column coordinates.

SCRR MODEL INTERFACE - SECTION II (SCRRMOD2) PROGRAM DESCRIPTION. The purpose of Section II of the interface program is to reformat the instructor and room requirement matrix data to meet MPSX input requirements . SCRRMOD2 utilizes the output of SCRRMOD1 to build two in-core vectors, one for resources and another for courses. MPSX requires that the requirement matrix elements be specified by column; that is, when one element is given, all other non-zero elements in that column must also be entered before another column is mentioned. This requires combining data from both the instructor and the room requirement matrices. Using the two in-core vectors, the total requirements for each course can be aggregated and the required MPSX input can be formatted.

The user must specify the value of the operating mode parameter as either "LO" or "FX" depending on the model's objective (see operating procedures, Volume III, page II-7).

SCRRMOD2 prints the output for the classroom portion of the Requirements Specification Listing.

SCRR MODEL - MPSX PROGRAM DESCRIPTION. The purpose of the MPSX program is to calculate the linear programming solution to the problem formulated by the SCRR interface program. The MPSX program also performs the post optimal sensitivity analysis. Both the linear programming and sensitivity analysis results are written on a file prior to reformating by the SCRR output print program.

A brief description of the MPSX procedures and system macros utilized within the SCRR model control program is presented below. More detailed descriptions of these procedures and macros can be found in the MPSX program description manual.[2]

INITIALZ. The INITIALZ macro establishes standard processing of all demands, sets all tolerances and output frequencies to standard values, initializes error conditions (input and computational), and sets up calls to special procedures.

MVADR (XDONFS, INFEAS). This statement moves the address of the control program statement labeled INFEAS into the location identified by the storage reference symbol XDONFS. XDONFS initially contains the address of the standard procedure which does not allow a solution to be filed when a no-feasible-solution condition is found during optimization. Moving the address of the XDONFS procedure to the control program statement, INFEAS, causes the solution output to be filed for both optimal and non-feasible-solution conditions.

---

[2] IBID. Chapter 4, pg. 179.

MOVE (XDATA, "FTCNORVA") and MOVE (XPBNAME, "SCRR1"). These two instructions move the input data set name, FTCNORVA, into the MPSX communication region location or cell referenced by the name XDATA, and move the problem file name, SCRR1, into the cell XPBNAME. This allows these files to be referenced later by control program statements. The location of both the input data set and the problem file is required by the CONVERT and SETUP procedures.

CONVERT. CONVERT provides the basic means of problem input. The procedure reads the input data, converts it into packed binary format, and writes it on the PROBFILE. The PROBFILE is a disk storage unit that contains the internal representation of the LP problem. While the problem is being generated, comprehensive error checks are made, and the statistics of the model are calculated for use by SETUP procedure.

BCDOUT. BCDOUT converts the user-specified binary problem in PROBFILE into the external input data format. A listing of the input data organized by course is provided. During model development, this listing was used to verify that the interface program was functioning correctly. BCDOUT has been retained in the MPSX control program because it provides a complete listing of all resources - instructors, labs, and classrooms - required per course convening for every course. This summary of requirements by course complements the Requirements Specification Listing which is organized by resource.

SETUP ("BOUND", "BUP1", "MAX"). SETUP reads the LP problem created by CONVERT on PROBFILE. The SETUP procedure then analyzes the model's statistics, types of input/output devices, and solution strategy to be used. The available memory is dynamically allocated for efficient problem solution and all work files used by the computational procedures are produced. SETUP also determines the initial LP basic solution. The SETUP parameter BOUND indicates the name of the BOUND vector in the original input data. The MAX parameter calls for maximization of the objective function.

The MPSX procedure SETUP prints the following output:

a. Table of the files that have been defined.

b. Storage allocation table.

c. Table of statistics regarding the matrix variables.

MOVE (XOBJ, "THRUPUT") and MOVE (XRHS, "AVAIL1"). These two statements move the name of the LP objective function into the XOBJ cell, and move the name of the right hand side into the XRHS cell.

CRASH. CRASH accepts the basis from SETUP. It then attempts to create a "good" starting basis for the optimization procedures by introducing structural vectors into the basis, removing logical vectors, and attempting to reduce the number of infeasibilities in the solution.

PRIMAL. PRIMAL is the main optimization procedure. It attempts to find a feasible solution, followed by an optimal solution. If the problem has no feasible solution; i.e., when requirements are larger than availability, an appropriate message is printed and PRIMAL is terminated. Upon termination of PRIMAL, the control program branches to the statement labeled INFEAS, which ultimately causes the solution output to be written on the file PRINT1.

PRIMAL uses a composite algorithm and the revised simplex method. It progresses from the initial basis to the optimal basis by a series of vector interchanges; one vector is introduced into the basis and one is removed.

PRIMAL outputs an iteration log which notes for each iteration number, the vector number removed from the basis, the vector number entered into the basis, the reduced cost of the incoming vector, and the sum of remaining infeasibilities or value of the objective function.

SOLUTION ("FILE", "PRINT1"). SOLUTION outputs a summary of the present LP problem and its solution during the computational procedure, if the solution is infeasible, or after the computational procedure if the solution is optimal. This output is written on the PRINT1 file.

RANGE ("FILE", PRINT2"). RANGE is used post optimally to generate and output an analysis of the current solution. The analysis includes:

a. The effects of changes in class capacity on optimum convening levels.

b. The impact on student throughput of changing the number of course convenings from optimum level and the total range of course convenings for which this impact is valid.

c. The impact on student throughput of modifying a resource level, and the interval for which this impact is valid.

This tabluation is written on the PRINT2 file.

EXIT. The purpose of this statement is to return control to Operating System/360, terminating the MPSX execution.

INFEAS Subroutine. This subroutine is entered only when the PRIMAL procedure encounters an infeasible solution. The purpose of the subroutine is to write the solution output on file PRINT1 in the event of an infeasible solution condition.

SCRR OUTPUT FORMAT PROGRAM. The purpose of the output format program is to read the filed results from the linear programming procedure and the sensitivity analysis procedure, and print the required data in a meaningful report format. The program reads the SOLUTION output from the PRINT1 file, and the RANGE output (when it exists) from the PRINT2 file. The column section from PRINT1 is sorted; the two column sections from PRINT2 are first merged, then sorted. The two resulting sorted files are finally merged to form a single column or course file. The same procedure is then repeated for the row or resource section. The resource and course files are then printed in the format shown in the output parameter description in Volume II, page II-13.

SCRR MODEL OPERATING PROCEDURES

The purpose of this section is to provide the model user with detailed instructions on the use of the SCRR model. A knowledge of both the course file and the instructor file portions of the DOTS data base will give the user greater flexibility in using the model, and will assist him in interpreting the model results. These operating procedures assume that the model will be run on an

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IBM 360/40, configured as described in Volume I of this report. Minor modifications may have to be made to these procedures as a function of system configurations at different locations.

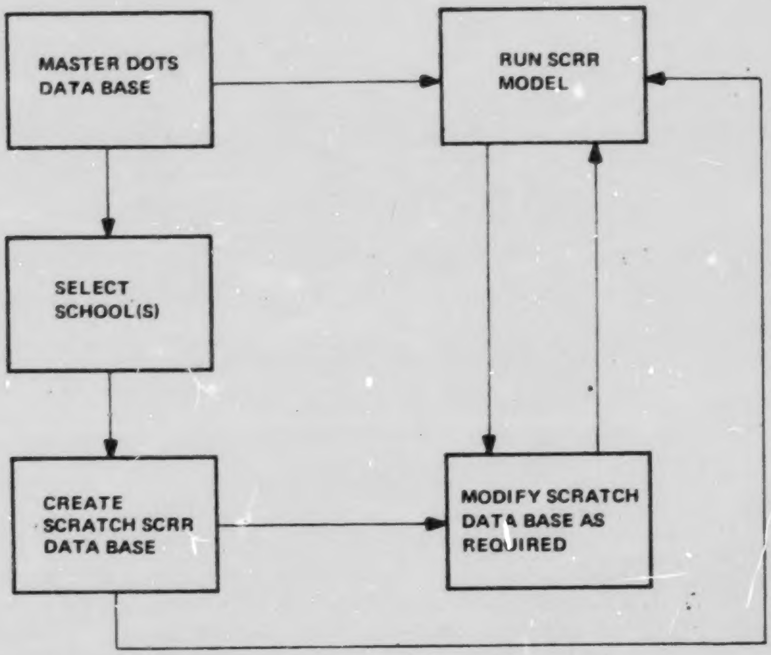
MASTER DOTS DATA BASE
RUN SCRR MODEL
SELECT SCHOOL(S)
CREATE SCRATCH SCRR DATA BASE
MODIFY SCRATCH DATA BASE AS REQUIRED

FIGURE II-2 USER'S OVERVIEW OF SCRR MODEL

OVERVIEW OF THE USE OF THE SCRR MODEL. The overall user option flow for the SCRR model appears in Figure II-2. As shown, the model can be run from either the master DOTS data base which contains current resource data for all courses of instruction at the training complex, or from the scratch SCRR data base. The scratch data base can be used to select a subset of the total courses from the master DOTS data base. For example, all courses controlled by the ASW school could be transferred from the master data base to the scratch data base. The SCRR model could then be run for just the ASW courses, rather than all courses at the training complex. Once the scratch data base has been created, whether it contains all courses from the master data base or some fraction of the total, the user has the option of modifying any data element in the scratch data base. Modifications are made to the scratch data base primarily to create hypothetical situations which can be evaluated with the SCRR model.

OPERATING PROCEDURES. The SCRR model operating procedures represent a combination of two important attributes, flexibility and simplicity. The existence of just three basic operating procedures, each of which is implemented by the submission of a punched card deck to a computer center for processing, and the requirement to enter only those data elements which the user desires to change, makes the SCRR model easy to use The capability to easily modify any data base element, combined with the capability to process the SCRR model procedures in series (the procedure order is determined by the user's objectives), provides the user with maximum flexibility.

The three SCRR model operating procedures which will be described in the following subsection are:

a. Execute SCRR model.

b. Create scratch SCRR data base.

c. Modify scratch SCRR data base.

Execute SCRR Model. The SCRR model is executed by computer processing of the punched card deck shown in Figure II-3. The model user must specify the data base to be accessed by the SCRR model. The last phrase on the second card in Figure II-3 indicates data base selection.

```
//STEP1   EXEC DLIBATCH,PROG=SCRRMOD1,PSB=INTRFACE,DB=SCRR
```

If the parameter DB=SCRR is entered, the SCRR model will access the data contained in the scratch SCRR data base. If the parameter DB=MASTER is specified, the SCRR model will format the required data input based on the contents of the master DOTS data base.

The user must also specify the SCRR model operating mode. The operating mode is designated by the last phrase on the fifth card shown in Figure II-3.

```
//STEP2   EXEC PGM=SCRRMOD2,PARM='LO'
```

If the parameter PARM='LO' is entered, the model will establish the current number of course convenings for each course as a lower bound in the optimization process. The model will then calculate the optimal number of convenings for each course, which will maximize student throughput. If the parameter PARM='FX' is specified, the current number of course convenings will be treated as a fixed constant rather than a lower bound. The model will not optimize the number of course convenings, but will calculate the resources required to attain the specified number of convenings.

```
//SCRRNAVY JOB 'SCRR MODEL',MSGLEVEL=(0,0) SCRR FROM SCRATCH DB
//STEP1   EXEC DLIBATCH,PROG=SCRRMOD1,PSB=INTRFACE,DB=SCRR
//GO.SYSUT1 DD DSN=&&MATRIX,UNIT=SYSDA,SPACE=(CYL,(1,1),RLSE),
//             DISP=(NEW,PASS)
//GO.ERC DD DSN=&&LIST,UNIT=SYSDA,SPACE=(CYL.(1,1),RLSE),DISP=(,PASS)
//STEP2   EXEC PGM=SCRRMOD2,PARM='LO'
//STEPLIB DD   DSN=TEST.LINKLIB,DISP=SHR
//SORTLIB DD   DSN=SYS1.SORTLIB,DISP=SHR
//SYSPRINT DD  SYSOUT=A
//SYSOUT   DD  DUMMY
//SORTIN   DD  DSN=&&MATRIX,DISP=(OLD,DELETE)
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,2,,CONTIG)
//SORTWK02 DD  UNIT=SYSDA,SPACE=(CYL,2,,CONTIG)
//SORTWK03 DD  UNIT=SYSDA,SPACE=(CYL,2,,CONTIG)
//SYSUT1   DD  DSN=&&CARDIMAG,UNIT=SYSDA,SPACE=(CYL.(1,1),RLSE),
//             DISP=(NEW,PASS)
//STEP3   EXEC SCRRMODL
//GO.SYSIN DD DSN=&&CARDIMAG,DISP=(OLD,DELETE)
//STEP4   EXEC PGM=SCRRLIST,COND=EVEN
//STEPLIB  DD  DSN=TEST.LINKLIB,DISP=SHR
//SORTLIB  DD  DSN=SYS1.SORTLIB,DISP=SHR
//SYSPRINT DD  SYSOUT=A
//PRINT1   DD  DSN=&&PRINT1,DISP=(OLD,DELETE)
//PRINT2   DD  DSN=&&PRINT2,DISP=(OLD,DELETE)
//SYSOUT   DD  DUMMY
//SORTIN   DD  UNIT=SYSDA,SPACE=(CYL,(1,1),RLSE)
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,(1,1),RLSE)
//SORTWK02 DD  UNIT=SYSDA,SPACE=(CYL,(1.1),RLSE)
//SORTWK03 DD  UNIT=SYSDA,SPACE=(CYL,(1,1),RLSE)
//SORTOUT  DD  UNIT=SYSDA,SPACE=(CYL,(1,1)),DCB=(RECFM=FB,LRECL=90,
//             BLKSIZE=900,BUFNO=3)
/*
```

FIGURE II-3 CARD DECK TO EXECUTE SCRR MODEL

Execution of the SCRR model will result in three output listings:

a. Requirements Specification Listing.

b. LP Optimal Solution and Sensitivity Analysis - Resource Data.

c. LP Optimal Solution and Sensitivity Analysis - Course Data.

These listings are discussed in detail in the Output Parameters Description (page II-13) of Volume II.

Create Scratch SCRR Data Base. The scratch SCRR data base can be created by processing the punched card deck shown in Figure II-4. The user can select what portion of the master DOTS data base is to be duplicated on the scratch data base through use of the school select card. The total master data base can be duplicated on the scratch data base by entering the word "ALL", left justified in field 1 on the school select card (see Figure II-5). Complete omission of the school select card from the "create" card deck will also copy the entire master data base. Specific schools can be selected from the master by entering the code for the first school (see Figure II-6) in field 1 of the school select card, the code for the second school in field 2, etc. The number of schools which may be selected from the master data base is limited to twelve. All school codes should be left justified.

```
//SCRRNEW JOB  'SCRR MODEL'  THIS JOB CREATES A NEW SCRATCH DATA BASE
//STEP1   EXEC CRSEDUMP,DB=MASTER
//STEP2   EXEC SELECT
//SELECT.SYSIN DD *             *SCHOOL SELECT CARD HERE*

          SCHOOL SELECT CARD GOES HERE
/*
//STEP3   EXEC DLIBATCH,PROG=CRSEREST,PSB=CRSELOAD,DB=SCRR
//GO.UNLOAD DD DSN=&&GOSET,DISP=(OLD,DELETE)
//STEP5   EXEC DLIBATCH,PROG=INSTDUMP,PSB=INSTDUMP,DB=MASTER
//GO.UNLOAD DD DSN=&&UNLOAD,UNIT=SYSDA,SPACE=(CYL,(1,1),RLSE),
//         DISP=(NEW,PASS)
//STEP6   EXEC DLIBATCH,PROG=INSTREST,PSB=INSTLOAD,DB=SCRR
//GO.UNLOAD DD DSN=&&UNLOAD,DISP=(OLD,DELETE)
```

FIGURE II-4 CARD DECK TO CREATE SCRATCH SCRR DATA BASE

1	7	13	19	25	31	37	43	49	55	61	67
FIELD 1	FIELD 2	FIELD 3	FIELD 4	FIELD 5	FIELD 6	FIELD 7	FIELD 8	FIELD 9	FIELD 10	FIELD 11	FIELD 12

FIGURE II-5 SCHOOL SELECT CARD FORMAT

SCHOOL NAME	SCHOOL CODE
Air Conditioning and Refrigeration	AC&R
Anti-submarine Warfare	ASW
Communications	COMM
Damage Control/Fire Fighting	DC/FF
Electronic Technician	E T
Electrical	ELEC
Instructor Training and Administration	IT/AD
Navigation	NAV
Supply	SUPPLY
Teletype Maintenance	TTM
3-M	3-M

FIGURE II-6 SCHOOL CODES FOR SCHOOL SELECT CARD

It is possible to create either the scratch SCRR data base course file or the instructor file independently. Processing the first eight cards including the school select card, from Figure II-4, will create the course file on the scratch data base. Processing the first card, together with the last five cards shown in Figure II-4, will duplicate the master data base instructor file on the scratch data base. After the scratch data base is initially created, it is maintained on disk storage until it is either recreated using the card deck shown in Figure II-4, or until it is modified using the procedures outlined in the following subsection. The following sequence is presented as an illustration of acceptable procedure flow.

STEP 1. CREATE SCRATCH DATA BASE COURSE FILE.
. SELECT AC&R SCHOOL.

STEP 2. CREATE SCRATCH DATA BASE INSTRUCTOR FILE.

STEP 3. EXECUTE SCRR MODEL.
. DB = SCRR
. PARM = "LO"

STEP 4. EXECUTE SCRR MODEL.
. DB = SCRR
. PARM = "FX"

STEP 5. CREATE SCRATCH DATA BASE COURSE FILE.
. SELECT SUPPLY SCHOOL

STEP 6. EXECUTE SCRR MODEL.
. DB = SCRR
. PARM = "LO"

STEP 7. EXECUTE SCRR MODEL.
. DB = SCRR
. PARM = "FX"

Steps one and two create the scratch data base. In steps three and four, the SCRR model is executed using two different model operating modes, accessing the scratch SCRR data base which contains only AC&R courses. Step five recreates the scratch SCRR data base replacing AC&R courses with SUPPLY courses. Step six and seven, again, execute the SCRR model, using both operating modes, again accessing the scratch SCRR data base which now contains SUPPLY courses. It is not necessary to recreate the scratch data base instructor file in step five since it was previously created in step two.

Creation of the scratch SCRR data base does not produce user output.

Modify Scratch SCRR Data Base. Assuming that the scratch SCRR data base has been previously created, any of the data elements contained in the scratch SCRR data base can be modified by processing the punched card deck shown in Figure II-7. It is not necessary to update both the course file and the instructor file simultaneously. Processing the first half of the card deck reproduced in Figure II-7, up to but not including //STEP7, will update only the scratch course file. Similarly, processing the //SCRRUPT JOB card with the second half of the Figure II-7 card deck, will cause the requested changes to be made to the scratch instructor file. The card formats for the file update cards are presented in the data base section of Volume III. However, it should be noted that the file updating procedure for both the master data base and the scratch data base requires the user to enter only those data elements which he wishes to modify. Data that did not change need not be re-entered in the data base as part of the update process. There is no limit to the number of file update cards which can be processed on each update run.

The modify scratch SCRR data base procedure produces an output whether or not each of the updat cards has been successfully processed or has been rejected because of a data error. Any data errors detected by the update edit routine may be corrected and reprocessed through the data base modification procedure.

```
//SCRRUPT JOB 'SCRR MODEL'   THIS JOB UPDATES THE SCRATCH DATA BASE
//STEP4 EXEC CRSEUPT,DB=SCRR
//SORT.UPDATES DD *               COURSE FILE UPDATES HERE

           COURSE FILE UPDATES

/*
//

//STEP7 EXEC DLIBATCH,PROG=INSTUPT,PSB-INSTUPT,DB-SCRR
//GO.SYSIN DD *                        INSTRUCTOR FILE UPDATES HERE

           INSTRUCTOR FILE UPDATES

/*
```

FIGURE II-7   CARD DECK TO MODIFY SCRATCH DATA BASE

MODEL PROGRAM LISTINGS

The SCRR model program listings are presented on the following page.

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```
MEMBER NAME   SCRRMODL                                                        00000010
//DEFAULT PROC PROG=SCRRMODL,VOL=NAVY01,PARAM=TASK                            00000020
//FORMAT  EXEC PGM=FORMATTR                                                   00000030
//STEPLIB  DD  DSN=TEST.LINKLIB,DISP=SHR                                      00000040
//SYSPRINT DD  SYSOUT=A                                                       00000050
//PRINT1   DD  DSN=&&PRINT1,UNIT=SYSSQ,SPACE=(CYL,(1,1)),                     00000060
//             DCB=(RECFM=VBS,LRECL=208,BLKSIZE=7294),DISP=(,PASS)            00000070
//PRINT2   DD  DSN=&&PRINT2,UNIT=SYSSQ,SPACE=(CYL,(1,1)),                     00000080
//             DCB=(RECFM=VBS,LRECL=208,BLKSIZE=7294),DISP=(,PASS)            00000090
//GO      EXEC PGM=DJLEXEC,PARM='&PARAM'                                      00000100
//STEPLIB  DD  DSN=MPSSYS,DISP=SHR                                            00000110
//ETA1     DD  UNIT=2314,SPACE=(CYL,6,,CONTIG)                                00000120
//MATRIX1  DD  UNIT=2314,SPACE=(CYL,6,,CONTIG)                                00000130
//SYSPRINT DD  SYSOUT=A,DCB=(RECFM=FBA,BLKSIZE=133,LRECL=133)                 00000140
//SCRATCH1 DD  UNIT=2314,SPACE=(CYL,6,,CONTIG)                                00000150
//SCRATCH2 DD  UNIT=2314,SPACE=(CYL,6,,CONTIG)                                00000160
//PROBFILE DD  UNIT=2314,SPACE=(CYL,6,,CONTIG)                                00000170
//SYSMLCP  DD  DSN=&PROG,UNIT=2314,VOL=SER=&VOL,DISP=SHR                      00000180
//PRINT1   DD  DSN=&&PRINT1,DISP=(OLD,PASS)                                   00000190
//PRINT2   DD  DSN=&&PRINT2,DISP=(OLD,PASS)


//SCRRMODL JOB
//COMPILE EXEC PGM=DJLCOMP
//STEPLIB DD DSN=MPSSYS,DISP=SHR
//SCRATCH1 DD UNIT=2314,SPACE=(TRK,(2,2))
//SCRATCH2 DD UNIT=2314,SPACE=(TRK,(2,2))
//SCRATCH3 DD UNIT=2314,SPACE=(TRK,(2,2))
//SCRATCH4 DD UNIT=2314,SPACE=(TRK,(2,2))
//SYSMLCP DD UNIT=2314,VOL=SER=NAVY01,SPACE=(TRK,(4,2),RLSE,CONTIG),
//             DSNAME=SCRRMODL,DISP=(NEW,CATLG,DELETE)
//SYSPRINT DD SYSOUT=A,DCB=(RECFM=FBA,BLKSIZE=133,LRECL=133)
//SYSIN DD *
          PROGRAM
          INITIALZ
          MVADR (XDONFS, INFEAS)
          MOVE(XDATA,'FTCNORVA')
          MOVE(XPBNAME,'SCRR1')
          CONVERT
          BCDOUT
          SETUP('BOUND','BUP1','MAX')
          MOVE(XOBJ,'THRUPUT')
          MOVE(XRHS,'AVAIL1')
          CRASH
          PRIMAL
          SOLUTION('FILE','PRINT1')
          RANGE('FILE','PRINT2')
          EXIT
INFEAS    IF (XEPS .EQ.0. INFEAS1)
          XEPS = 0.0
          CONTINUE
INFEAS1   SOLUTION ('FILE', 'PRINT1')
          EXIT
          PEND
```

INTERFACE PROGRAM LISTINGS AND FLOW CHARTS

The SCRR model interface program listings and flow charts are presented on the following pages.

```
        /* SCRR MODFL INTERFACE - SECTION 1 */                                    PAGE

         SOURCE LISTING.

STMT LEVEL NEST
                     /* SCRR MODEL INTERFACE - SECTION 1 */
  1            DLITPLI:PROCEDURE(CRSEPCB,INSTPCB) OPTIONS(MAIN);

                    /***************/
                    /* COURSE PCB */
                    /***************/

  2     1           DECLARE 1 CRSEPCB,
                              2 DBNAME CHAR(8),
                              2 LEVFD CHAR(2),
                              2 STATCD CHAR(2),
                              2 PROCOPT CHAR(4),
                              2 JCBADDR POINTER,
                              2 SEGFD CHAR(8),
                              2 KEYLEN FIXED BIN(31),
                              2 NOSS FIXED BIN(31),
                              2 KEYFD CHAR(12),
                              2 SN1 CHAR(8),
                              2 SN2 CHAR(8),
                              2 SN3 CHAR(8),
                              2 SN4 CHAR(8),
                              2 SN5 CHAR(8),
                              2 SN6 CHAR(8),
                              2 SN7 CHAR(8);

                    /*******************/
                    /* INSTRUCTOR PCB */
                    /*******************/

  3     1           DECLARE
                       1 INSTPCB,
                         2 DBNAME CHAR(8),
                         2 LEVFD CHAR(2),
                         2 STATCD CHAR(2),
                         2 PROCOPT CHAR(4),
                         2 JCBADDR POINTER,
                         2 SEGFD CHAR(8),
                         2 KEYLEN FIXED BIN(31),
                         2 NOSS FIXED BIN(31),
                         2 KEYFD CHAR(2),
                         2 SN1 CHAR(8);

                    /*********************************************/
                    /* THIS SET OF DECLARATIONS DESCRIBES EACH */
                    /* OF THE SEGMENTS IN THE COURSE DATA BASE */
                    /*********************************************/

  4     1           DECLARE
                       1 COURSE,
                         2 PREFIX CHAR(10),
```

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```
              /* SCRM MODEL INTERFACE - SECTION 1 */                                                PAGE

STMT LEVEL NEST
                                                                              413
                      2 CRSNO CHAR(4),                                        414
                      2 CRSNAME CHAR(60),                                     415
                      2 DEPT CHAR(6),                                         416
                      2 LENGTH FIXED DEC(3,1),                                417
                      2 QUALTIME FIXED DEC(3,1),                              418
                      2 BUPCAP FIXED DEC(3,0),                                419
                      2 INSTCAP FIXED DEC(3,0),                               420
                      2 CRSTYPE FIXED DEC(1,0),                               421
                      2 MINCON FIXED DEC(3,0),                                422
                      2 CHNGDATE FIXED DEC(5,0),                              423
                      2 OFFSET FIXED DEC(5,0),                                424
                      2 NBUPCAP FIXED DEC(3,0),                               425
                      2 NINSTCAP FIXED DEC(3,0),                              426
                      2 NMINCON FIXED DEC(3,0),                               427
                      2 NLENGTH FIXED DEC(3,1),                               428
                      2 RECAWARD CHAR(4),                                     429
                      2 WAIT FIXED DEC(3,0),                                  430
                      2 JNO CHAR(4),                                          431
                      2 TPF1(2) FIXED DEC(5,0),                               432
                      2 TPF2(1) FIXED DEC(5,1),                               433
                    1 INST,                                                   434
                      2 INSTNO FIXED DEC(3,0),                                435
                      2 INSTNAME CHAR(15),                                    436
                      2 PERQUAL FIXED DEC(3,0),                               437
                      2 CURR BIT(1) ALIGNED,                                  438
                      2 INGRP FIXED DEC(3,0),                                 439
                    1 RATIOS,                                                 440
                      2 INDEX FIXED DEC(3,0),                                 441
                      2 RATIO FIXED DEC(3,1),                                 442
                      2 NUMINST FIXED DEC(3,0),                               443
                      2 CONTHRS FIXED DEC(5,1),                               444
                      2 TYPE FIXED DEC(1,0),                                  445
                      2 RATGRP FIXED DEC(3,0),                                446
                    1 RELCRS,                                                 447
                      2 REL CHAR(4),                                          448
                      2 RELGRP CHAR(2),                                       449
                    1 CLSRM,                                                  450
                      2 BLDG CHAR(5),                                         451
                      2 ROOM CHAR(3),                                         452
                      2 RMCAP FIXED DEC(3,0),                                 453
                      2 RMTYPE FIXED DEC(1,0),                                454
                      2 REQHRS FIXED DEC(5,1),                                455
                      2 AVAILHRS FIXED DEC(5,0),                              456
                    1 STDATA,                                                 457
                      2 TYPE FIXED DEC(3,0),                                  458
                      2 FACTOR FIXED DEC(3,0),                                459
                    1 CMPLXGRP,                                               460
                      2 TYPE FIXED DEC(3,0),                                  461
                      2 FACTOR FIXED DEC(3,0);                                  3
                                                                              462
                  /**********************************************/            463
                  /* THIS SET OF DECLARATIONS DESCRIBES EACH OF */            464
                  /* THE SEGMENTS IN THE INSTRUCTOR DATA BASE.  */            465
                  /**********************************************/            466
```

```
                 /* SCRR MODEL INTERFACE - SECTION I */                                  PAGE

STMT LEVEL NEST

  5     1                 DECLARE
                          1   INSTRUCT,
                             2 NUMBER  FIXED DEC(3,0),
                             2 NAME CHAR(15),
                             2 INITIALS(2) CHAR(1),
                             2 RATE CHAR(5),
                             2 DEPT CHAR(6),
                             2 REPORT CHAR(6),
                             2 ROTATE CHAR(4),
                             2 AVAIL FIXED DEC(5,0);

                          /***********************/
                          /* CUURSE SEGMENT SSA */
                          /***********************/

  6     1                 DECLARE
                             1 SSA1 STATIC,
                               2 SEGMENT CHAR(8) INIT('COURSE  '),
                               2 LP CHAR(1) INIT('('),
                               2 FIELD CHAR(8) INIT('CRSNO   '),
                               2 RO CHAR(2) INIT(' ='),
                               2 KEY CHAR(4),
                               2 RP CHAR(1) INIT(')'),
                             1 SSA2 STATIC,
                                2 SEGMENT CHAR(8),
                                2 LP CHAR(1) INIT('('),
                                2 FIELD CHAR(8),
                                2 RO CHAR(2) INIT(' ='),
                                2 KEY CHAR(8),
                                2 RP CHAR(1) INIT(')');


                          /***************************/
                          /* INSTRUCTOR SEGMENT SSA */
                          /***************************/

  7     1                 DECLARE
                             1 INSTSSA STATIC,
                               2 SEGMENT CHAR(8) INIT('INSTRUCT'),
                               2 LP CHAR(1) INIT('('),
                               2 FIELD CHAR(8) INIT('NUMBER  '),
                               2 RO CHAR(2) INIT(' ='),
                               2 KEY FIXED DEC(3,0),
                               2 RP CHAR(1) INIT(')');


                          /*******************/
                          /* FUNCTION CODES */
                          /*******************/

  8     1                 DECLARE (GET_UNIQUE        CHAR(4) INIT('GU  '),
                                   GET_NEXT          CHAR(4) INIT('GN  '),
                                   GET_NEXT_WP       CHAR(4) INIT('GNP '),
                                   GET_HOLD_UNIQUE   CHAR(4) INIT('GHU '),
                      /* SCRR MODEL INTERFACE - SECTION I */                                                     PAGE

      STMT LEVEL NEST
                                       GET_HOLD_NEXT     CHAR(4) INIT('GHN '),                  523
                                       GET_HOLD_NEXT_WP  CHAR(4) INIT('GHNP'),                  524
                                       INSERT            CHAR(4) INIT('ISRT'),                  525
                                       DELETE            CHAR(4) INIT('DLET'),                  526
                                       REPLACE           CHAR(4) INIT('REPL'),                  527
                                       THREE FIXED BINARY(31) INIT(3),                          528
                                       FOUR  FIXED BINARY(31) INIT(4),                          529
                                       FIVE  FIXED BINARY(31) INIT(5)) STATIC;                  530
                                                                                                  5
         9     1                 DECLARE                                                          6
                                   SSA3 CHAR(9) STATIC,                                           7
                                   1 SSA4 STATIC,                                                 8
                                     2 PRE CHAR(19) INIT('INST    (INSTNO   ='),                 9
                                     2 KEY FIXED DEC(3,0),                                       10
                                     2 RP CHAR(1) INIT(')'),                                     11
                                   1 CID(*) CONTROLLED,                                          12
                                     2 NAME CHAR(4),                                             13
                                     2 GO(8) BIT(1) UNALIGNED,                                   14
                                     2 CAPACITY FIXED DEC(3,0),                                  15
                                     2 CONVENINGS FIXED DEC(3,0),                                16
                                   1 TEMP LIKE CID CONTROLLED,                                   17
                                   1 SUBJECT LIKE CID STATIC,                                    18
                                   1 SEQ(8,10) STATIC,                                           19
                                     2 NAME CHAR(4),                                             20
                                     2 GRP FIXED DEC(3,0),                                       21
                                   1 OUTREC STATIC,                                              22
                                     2 RCTP FIXED BIN(16),                                       23
                                     2 R    FIXED BIN(16),                                       24
                                     2 COL  FIXED BIN(16),                                       25
                                     2 CDP CHAR(4),                                              26
                                     2 RMNO CHAR(8),                                             27
                                     2 REQ FIXED DEC(7,1),                                       28
                                     2 CAP  FIXED DEC(2,0),                                      29
                                     2 CON  FIXED DEC(2,0),                                      30
                                   FATALSW BIT(1) STATIC ALIGNED INIT('0'B),                     31
                                   INSTV(8,25) STATIC FIXED DEC(3,0),                            32
                                   (SEQSIZE(8),INSTSIZE(8)) STATIC FIXED BIN(16),                33
                                   (N,I,J,K,II,REFSIZE) FIXED BIN(16) STATIC INIT(0),            34
                                   CHNG FIXED DEC(5,3) STATIC,                                   35
                                   REPLY CHAR(1) STATIC,                                         36
                                   RM(250) CHAR(8) STATIC,                                       37
                                   RMT(15) LIKE CLSRM STATIC,                                    38
                                   RMISIZE FIXED BIN(16) STATIC,                                 39
                                   (Z,GROUP,TG) FIXED DEC(3,0) STATIC,                           40
                                   DATE BUILTIN,                                                 41
                                   DTL CHAR(6) STATIC,                                           42
                                   TDTE CHAR(8) STATIC INIT('  /  /  '),                         43
                                   PAGENO FIXED DEC(3,0) STATIC INIT(1),                         44
                                   REF(10) FIXED DEC(3,0) STATIC,                                45
                                   TC1 CHAR(8) STATIC,                                           46
                                   AVHRS FIXED DEC(7,1),                                         47
                                   TN CHAR(4),                                                   48
                                   ERC FILE STREAM OUTPUT PRINT,                                 49
                                   SYSUT1 FILE RECORD SEQUENTIAL ENV(F(3200,32) BUFFERS(1)),     50
                                   WRITER ENTRY(FIXED BIN(16),FIXED DEC(3,0)),                   51
                                   PACK ENTRY(CHAR(2)) RETURNS(FIXED DEC(3,0)),
STMT LEVEL NEST
                          IDXA ENTRY(CHAR(8)) RETURNS(FIXED BIN(16)),                          52
                          ABEND ENTRY(FIXED BIN(16)),                                          53
                          ERR ENTRY(FIXED BIN(16)),                                            54
                          IDX ENTRY(CHAR(4)) RETURNS(FIXED BIN(16)),                           55
                          SEARCH ENTRY(FIXED DEC(3,0)) RETURNS(BIT(1));                        56
                                                                                               57
                                                                                               58
 10      1              DISPLAY('SCRR MODEL INTERFACE - VER. 1.0');                            59
 11      1              OPEN FILE(SYSUT1) OUTPUT,FILE(SYSPRINT),FILE(ERC);                     60
 12      1              DTE=DATE;                                                              61
 13      1              SUBSTR(TDTE,1,2)=SUBSTR(DTE,3,2);                                      62
 14      1              SUBSTR(TDTE,4,2)=SUBSTR(DTE,5,2);                                      63
 15      1              SUBSTR(TDTE,7,2)=SUBSTR(DTE,1,2);                                      64
 16      1              ON ENDPAGE(SYSPRINT) BEGIN;                                            65
 18      2                PUT FILE(SYSPRINT) PAGE EDIT                                         66
                          (TDTE,'DOTS SUPPORT UTILITY---SCRR MODEL INTERFACE','PAGE ',         67
                          PAGENO)(A(8),COL(17),A,COL(73),A,F(3));                              68
 19      2                PUT FILE(SYSPRINT) SKIP(2);                                          69
 20      2                PAGENO=PAGENO+1;                                                     70
 21      2                END;                                                                 71
 22      1              SIGNAL ENDPAGE(SYSPRINT);                                              72
                                                                                               73
                        /* INITIALIZE THE CID VECTOR */                                        74
 23      1              CALL PLITDLI(FOUR,GET_NEXT,CRSEPCB,COURSE,'COURSE   ');                75
 24      1              DO WHILE(CRSEPCB.STATCD='  ' | CRSEPCB.STATCD='GA');                   76
 25      1    1           IF CRSEPCB.SEGFD='COURSE  ' THEN DO;                                 77
 27      1    2             ALLOCATE TEMP;                                                     78
 28      1    2             TEMP.NAME=CRSNO;                                                   79
 29      1    2             TEMP.GO='1'B;                                                      80
 30      1    2             TEMP.CAPACITY=INSTCAP;                                             81
 31      1    2             IF CHNGDATE>0 THEN DO;                                             82
 33      1    3               CHNG=CHNGDATE;                                                   83
 34      1    3               IF CHNG<51 THEN                                                  84
 35      1    3               TEMP.CONVENINGS=CHNG/52*MINCON + (52-CHNG)/52*NMINCON;           85
 36      1    3               ELSE TEMP.CONVENINGS=MINCON;                                     86
 37      1    3               END;                                                             87
 38      1    2             ELSE TEMP.CONVENINGS=MINCON;                                       88
 39      1    2             N=N+1;                                                             89
 40      1    2             END;                                                               90
 41      1    1           CALL PLITDLI(FOUR,GET_NEXT,CRSEPCB,COURSE,'COURSE   ');              91
 42      1    1           END;                                                                 92
                        /* N NOW EQUALS THE NUMBER OF COURSES IN THE FILE */                   93
 43      1              ALLOCATE CID(N);                                                       94
 44      1              DO I=N BY -1 TO 1;                                                     95
 45      1    1           CID(I)=TEMP;                                                         96
 46      1    1           FREE TEMP;                                                           97
 47      1    1           END;                                                                 98
 48      1              R=1;                                                                   99
 49      1              KCTP=0;                                                               100
 50      1              DO I=1 BY 1 TO N;                                                     101
 51      1    1           SUBJECT=CID(I);                                                     102
 52      1    1           CALL RESET;                                                         103
 53      1    1           SSA1.KEY=SUBJECT.NAME;                                              104
 54      1    1           SSA3='RELCRS   ';                                                   105
 55      1    1           SE_SIZE=0;                                                          106
```

```
   /* SCRR MODEL INTERFACE - SECTION 1 */                                              PAGE

STMT LEVEL NEST

 56     1    1              CALL PLITDLI(FIVE,GET_NEXT,CRSEPCB,RELCRS,SSA1,SSA3);
 57     1    1              DO WHILE(CRSEPCB.STATCD='  ');
 58     1    2                TG=PACK(RELGRP);
 59     1    2                SEQSIZE(TG)=SEQSIZE(TG)+1;
 60     1    2                SEQ.NAME(TG,SEQSIZE(TG))=REL;
 61     1    2                CALL PLITDLI(FIVE,GET_NEXT,CRSEPCB,RELCRS,SSA1,SSA3);
 62     1    2                END;
 63     1    1              IF CRSEPCB.STATCD¬='GE' THEN CALL ERR(1);
 65     1    1              CALL RESET;
 66     1    1              SSA3='INST     ';
 67     1    1              INSTSIZE=0;
 68     1    1              CALL PLITDLI(FIVE,GET_NEXT,CRSEPCB,INST,SSA1,SSA3);
 69     1    1              DO WHILE(CRSEPCB.STATCD='  ');
 70     1    2                IF CURR THEN DO;
 72     1    3                TG=INST.INGRP;
 73     1    3                INSTSIZE(TG)=INSTSIZE(TG)+1;
 74     1    3                INSTV(TG,INSTSIZE(TG))=INST.INSTNO;
 75     1    3                END;
 76     1    2                CALL PLITDLI(FIVE,GET_NEXT,CRSEPCB,INST,SSA1,SSA3);
 77     1    2                END;
 78     1    1              IF CRSEPCB.STATCD¬='GE' THEN CALL ERR(1);
 80     1    1              DO Z=1 BY 1 TO 8;
 81     1    2                IF CID.GO(I,Z) THEN DO;
 83     1    3                DO II=1 BY 1 TO SEQSIZE(Z);
 84     1    4                  CALL RESET;
 85     1    4                  SSA1.KEY=SEQ.NAME(Z,II);
 86     1    4                  SSA3='RELCRS   ';
 87     1    4                  REFSIZE=0;
 88     1    4                  CALL PLITDLI(FIVE,GET_NEXT,CRSEPCB,RELCRS,SSA1,SSA3);
 89     1    4                  DO WHILE(CRSEPCB.STATCD='  ');
 90     1    5                    IF REL=SUBJECT.NAME THEN DO;
 92     1    6                      REFSIZE=REFSIZE+1;
 93     1    6                      REF(REFSIZE)=PACK(RELGRP);
 94     1    6                      END;
 95     1    5                    CALL PLITDLI(FIVE,GET_NEXT,CRSEPCB,RELCRS,SSA1,SSA3);
 96     1    5                    END;
 97     1    4                  IF CRSEPCB.STATCD¬='GE' THEN CALL ERR(1);.
 99     1    4                  IF REFSIZE=0 THEN CALL ERR(2);
101     1    4                  ELSE DO;
102     1    5                    IF REFSIZE>1 THEN DO;
104     1    6                      DO J=1 BY 1 TO INSTSIZE(Z);
105     1    7                        SSA4.KEY=INSTV(Z,J);
106     1    7                        CALL PLITDLI(FIVE,GET_UNIQUE,CRSEPCB,
                                                 INST,SSA1,SSA4);
107     1    7                        IF CRSEPCB.STATCD='  ' THEN GO TO RS01;
109     1    7                        END;
110     1    6                      CALL ERR(3);
111     1    6      RS01:           GROUP=INST.INGRP;
112     1    6                      END;
113     1    5                    ELSE GROUP=REF(1);
114     1    5                    SEQ.GRP(Z,II)=GROUP;
115     1    5                  CALL RESET;
116     1    5                    SSA3='INST     ';
117     1    5                    CALL PLITDLI(FIVE,GET_NEXT,CRSEPCB,INST,SSA1,SSA3);
118     1    5                      DO WHILE(CRSEPCB.STATCD='  ');
```

```
STMT LEVEL NEST

119     1    6                IF INST.INGRP=GROUP THEN
120     1    6                  IF CURR THEN
121     1    6                    IF SEARCH(INST.INSTNO) THEN DO;
123     1    7                      INSTSIZE(Z)=INSTSIZE(Z)+1;
124     1    7                      INSTV(Z,INSTSIZE(Z))=INST.INSTNO;
125     1    7                      END;
126     1    6                CALL PLITDLI(FIVE,GET_NEXT,CRSEPCB,INST,SSA1,SSA3);
127     1    6                END;
128     1    5              IF CRSEPCB.STATCD¬='GE' THEN CALL ERR(1);
130     1    5              END;
131     1    4            END;
132     1    3          CID.GO(1,Z)='0'B;
133     1    3          IF INSTSIZE(Z)>0 THEN DO;
135     1    4          PUT FILE(SYSPRINT) SKIP(7) EDIT('INSTRUCTOR GROUP ',R,
                         ':   NUMBER          NAME            HOURS')(A,P'999',A);
136     1    4          AVHRS=0;
137     1    4          DO J=1 BY 1 TO INSTSIZE(Z);
138     1    5            INSTSSA.KEY=INSTV(Z,J);
139     1    5            CALL PLITDLI(FOUR,GET_UNIQUE,INSTPCB,INSTRUCT,INSTSSA);
140     1    5            IF INSTPCB.STATCD¬='  ' THEN CALL ERR(4);
142     1    5            ELSE DO;
143     1    6              AVHRS=AVHRS+AVAIL;
144     1    6              PUT FILE(SYSPRINT) SKIP EDIT(INSTRUCT.NUMBER,
                                INSTRUCT.NAME,AVAIL)(X(25),F(3),X(5),A,F(8));
145     1    6              END;
146     1    5            END;
147     1    4          COL=0; REQ=AVHRS;
149     1    4          WRITE FILE(SYSUT1) FROM(OUTREC);
150     1    4          PUT FILE(SYSPRINT) SKIP(2) EDIT
                        ('COURSES: NUMBER  CAPACITY  CONVENINGS  REQUIREMENTS')(A);
151     1    4          CALL WRITER(1,Z);
152     1    4          CID.GO(1,Z)='0'B;
153     1    4        DO II=1 BY 1 TO SEQSIZE(Z);
154     1    5            J=IDX(SEQ.NAME(Z,II));
155     1    5            IF J>0 & SEQ.GRP(Z,II)>0 THEN DO;
157     1    6              CALL WRITER(J,SEQ.GRP(Z,II));
158     1    6              CID.GO(J,SEQ.GRP(Z,II))='0'B;
159     1    6              END;
160     1    5            END;
161     1    4            R=R+1;
162     1    4            END;
163     1    3          END;
164     1    2          END;
165     1    1        END; /* PASS ONE IS COMPLETED WITH THIS END STATEMENT */
166     1           DISPLAY('SCRR MODEL INTERFACE - PHASE 1 COMPLETE');

167     1           ON ENDPAGE(ERC) BEGIN;
169     2             PUT FILE(ERC) PAGE EDIT('  ROOM         HOURS')(A);
170     2             PUT FILE(ERC) SKIP(2);
171     2             END;
172     1           SIGNAL ENDPAGE(ERC);
173     1           R=1; RM(1)='         ';
175     1           RCTP=1;
176     1           SSA3='CLSRM    ';
177     1           DO I=1 BY 1 TO N;
```

```
                                                                                   PAGE
            /* SCRR MODEL INTERFACE - SECTION 1 */

STMT LEVEL NEST

 178     1    1             CALL RESET;
 179     1    1             SSA1.KEY=CID.NAME(I);
 180     1    1             COP=SSA1.KEY;
 181     1    1             RMTSIZE=0;
 182     1    1             CALL PLITDLI(FIVE,GET_NEXT,CRSEPCB,CLSRM,SSA1,SSA3);
 183     1    1             DO WHILE(CRSEPCB.STATCD='  ');
 184     1    2               RMTSIZE=RMTSIZE+1;
 185     1    2               RMT(RMTSIZE)=CLSRM;
 186     1    2               CALL PLITDLI(FIVE,GET_NEXT,CRSEPCB,CLSRM,SSA1,SSA3);
 187     1    2               END;
 188     1    1             IF RMTSIZE>0 THEN DO;
 190     1    2               DO II=1 BY 1 TO RMTSIZE;
 191     1    3                 IF RMT.REQHRS(II)>0 THEN DO;
 193     1    4                   SUBSTR(TC1,1,5)=RMT.BLDG(II);
 194     1    4                   SUBSTR(TC1,6,3)=RMT.ROOM(II);
 195     1    4                   J=IDXA(TC1);
 196     1    4                   IF J=0 THEN DO;
 198     1    5                     R=R+1;
 199     1    5                     J=R;
 200     1    5                     RM(R)=TC1;
 201     1    5                     REQ=RMT.AVAILHRS(II);
 202     1    5                     COL=0;
 203     1    5                     RMNO=RM(R);
 204     1    5                     WRITE FILE(SYSUT1) FROM(OUTREC);
 205     1    5                     PUT FILE(ERC) SKIP EDIT(RMNO,REQ)(A,F(10));
 206     1    5                     END;
 207     1    4                   K=R; R=J; COL=1;
 210     1    4                   RMNO=RM(J);
 211     1    4                   REQ=RMT.REQHRS(II);
 212     1    4                   WRITE FILE(SYSUT1) FROM(OUTREC);
 213     1    4                   R=K;
 214     1    4                   END;
 215     1    3                 END;
 216     1    2               END;
 217     1    1             END;
 218     1                  DISPLAY('SCRR MODEL INTERFACE - PHASE 2 COMPLETE');

 219     1                  IF FATALSW THEN DO;
 221     1    1               DISPLAY('ERRORS DETECTED - SHOULD JOB PROCEED? (Y/N)')
                                REPLY(REPLY);
 222     1    1               IF REPLY='Y' THEN; ELSE CALL ABEND(1000);
 225     1    1               END;


 226     1         RESET:   PROCEDURE;
 227     2                  DECLARE SAVE CHAR(4) STATIC;
 228     2                  SAVE=SSA1.KEY;
 229     2                  SSA1.KEY='0000';
 230     2                  CALL PLITDLI(FOUR,GET_UNIQUE,CRSEPCB,COURSE,SSA1);
 231     2                  SSA1.KEY=SAVE;
 232     2                  END RESET;

 233     1         IDXA:    PROCEDURE(GUY) RETURNS(FIXED BIN(16));
 234     2                  DECLARE GUY CHAR(8);
 235     2                  DO K=1 BY 1 TO R;
```

```
              /* SCRR MODEL INTERFACE - SECTION I */                                    PAGE

STMT LEVEL NEST

236     2    1                 IF GUY=NM(K) THEN RETURN(K);
238     2    1                 END;
239     2                    RETURN(0);
240     2                    END IDXA;

241     1          WRITER:   PROCEDURE(ELEM,GROUP);
242     2                    DECLARE
                                ELEM FIXED BIN(16),
                                GROUP FIXED DEC(3,0);
243     2                    IF GROUP=0 THEN RETURN;
245     2                    CALL RESET;
246     2                    COL=ELEM;
247     2                    CAP=CID.CAPACITY(ELEM);
248     2                    CON=CID.CONVENINGS(ELEM);
249     2                    SSA1.KEY=CID.NAME(ELEM);
250     2                    CDP=SSA1.KEY;
251     2                    SSA3='RATIOS    ';
252     2                    REQ=0;
253     2                    CALL PLITDLI(FIVE,GET_NEXT,CRSEPCB,RATIOS,SSA1,SSA3);
254     2                    DO WHILE(CRSEPCB.STATCD='  ');
255     2    1                 IF RATGRP=GROUP THEN REQ=REQ+CONTHRS*NUMINST;
257     2    1                 CALL PLITDLI(FIVE,GET_NEXT,CRSEPCB,RATIOS,SSA1,SSA3);
258     2    1                 END;
259     2                    IF CRSEPCB.STATCD¬='GE' THEN CALL ERR(1);
261     2                    IF REQ=0 THEN CALL ERR(5);
263     2                    ELSE DO;
264     2    1                 WRITE FILE(SYSUT1) FROM(OUTREC);
265     2    1                 PUT FILE(SYSPRINT) SKIP EDIT
                                 (SSA1.KEY,CAP,CON,REQ)(X(10),A(4),F(9),F(11),F(12));
266     2    1                 END;
267     2                    RETURN;
268     2                    END WRITER;

269     1          IDX:      PROCEDURE(THING) RETURNS(FIXED BIN(16));
270     2                    DECLARE THING CHAR(4);
271     2                    DO K=1 BY 1 TO N;
272     2    1                 IF THING=CID.NAME(K) THEN RETURN(K);
274     2    1                 END;
275     2                    RETURN(0);
276     2                    END IDX;

277     1          SEARCH:   PROCEDURE(DUDE) RETURNS(BIT(1));
278     2                    DECLARE DUDE FIXED DEC(3,0);
279     2                    DO K=1 BY 1 TO INSTSIZE(Z);
280     2    1               IF DUDE=INSTV(Z,K) THEN RETURN('0'B);
282     2    1                 END;
283     2                    RETURN('1'B);
284     2                    END SEARCH;

285     1          ERR:      PROCEDURE(INCODE);
286     2                    DECLARE
                               INCODE FIXED BIN(16),
                               ERRL(5) LABEL;
287     2          (SUBSCRIPTRANGE):GO TO ERRL(INCODE);
```

```
                /* SCRR MODEL INTERFACE - SECTION 1 */                                     PAGE

STMT LEVEL NEST

 288      2         ERRL(1):/* DATA BASE ERROR */
                              PUT FILE(ERC) SKIP(2) EDIT
                                ('UNEXPECTED RETURN CODE FROM DATA MANAGEMENT - RC=',
                                 CRSEPCB.STATCD)(A);
 289      2                   PUT FILE(ERC) SKIP DATA(I,R,SUBJECT,Z);
 290      2                   FATALSW='1'B;
 291      2                   GO TO EC;
 292      2         ERRL(2):/* INVALID CHAINING */
                              PUT FILE(ERC) SKIP(2) EDIT
                                ('INVALID CHAIN DETECTED IN RELCHS SEGMENT :',
                                 'PARENT=',SUBJECT.NAME,'CHILD=',SEQ.NAME(Z,II))
                                (A,SKIP,A,A,X(5),A,A);
 293      2                   SEG.GRP(Z,II)=0;
 294      2                   FATALSW='1'B;
 295      2                   GO TO EC;
 296      2         ERRL(3):/* INSTRUCTOR NOT FOUND FOR MULTIPLE GROUP LINK */
                              PUT FILE(ERC) SKIP(2) EDIT
                                ('NO INSTRUCTOR FOUND TO LINK COURSE ',SUBJECT.NAME,
                                 'WITH COURSE ',SEQ.NAME(Z,II),', GROUP ',Z)
                                (A,A,X(1),A,A,A,F(2));
 297      2                   INST.INGRP=0;
 298      2                   FATALSW='1'B;
 299      2                   GO TO EC;
 300      2         ERRL(4):/* MISSING INSTRUCTOR */
                              PUT FILE(SYSPRINT) SKIP EDIT
                                (I,STV(Z,J),'<---NOT ON INSTRUCTOR FILE')(X(25),F(3),A);
 301      2                   FATALSW='1'B;
 302      2                   GO TO EC;
 303      2         ERRL(5):/* ZERO REQUIREMENT FOUND */
                              PUT FILE(ERC) SKIP(2) EDIT
                                ('WARNING - CALCULATED REQUIREMENT FOR GROUP',R,'BY COURSE',
                                 SSA1.KEY,' IS ZERO')(A,F(4),X(1),A,X(1),A,X(1),A);
 304      2                   FATALSW='1'B;
 305      2         EC:       RETURN;
 306      2                   END ERR;
 307      1                   END DLITPLI;
```

AUTOFLOW CHART SET -

```
CHART TITLE - PROCEDURE DLITPLI (CRSEPCB,INSTPCB) OPTIONS (MAIN)


                          -----------
                         / 00000001 /
                         -----------
                              |
                              |
                              |  NOTE  01
                      * * * * * * * * * * *
                      *    SCRR MODEL     *
                      *    INTERFACE -    *
                      *     SECTION I     *
                      * * * * * * * * * * *
                              |
                              |
                              |

                           DLITPLI
                              |
                              |
                    00000003  |  NOTE  02
                      * * * * * * * * * * *
                      *     % INCLUDE     *
                      * CRSEPCB,INSTPCB,  *
                      *  COURSE,INSTRUCT  *
                      * * * * * * * * * * *
                              |
                              |
                    00000004  |  NOTE  03
                      * * * * * * * * * * *
                      *     % INCLUDE     *
                      * CRSESSA,INSTSSA,  *
                      *     FUNCTION      *
                      * * * * * * * * * * *
                              |
                              |
                    00000059  |          04
                         ----------------
                        /               /
                       /DISPLAY ('SCRR /
                      /MODEL INTERFACE/
                     / - VER. 1.0')  /
                    /               /
                    ----------------
                              |
                              |
                    00000060  |          05
                         ----------------
                        /               /
                       /               /
                      /   OPEN FILE   /
                     /(SYSUT1) OUTPUT/
                    /               /
                    ----------------
                              |
                              |
                    00000060  |          06
                         ----------------
                        /               /
                       /               /
                      /   OPEN FILE   /
                     /   (SYSPRINT)  /
                    /               /
                    ----------------
                              |
                              |
                    00000060  |          07
                         ----------------
                        /               /
                       /               /
                      /OPEN FILE (ERC)/
                     /               /
                    /               /
                    ----------------
                              |
                              |
                    00000061  |          08
                    *-------------------*
                    |    DTE = DATE     |
                    |                   |
                    | SUBSTR (TDTE,1,2) |
                    |     = SUBSTR      |
                    |    (DTE,3,2)      |
                    |                   |
                    | SUBSTR (TDTE,4,2) |
                    |     = SUBSTR      |
                    |    (DTE,5,2)      |
                    *-------------------*
                              |
                              |
                    00000064  |          09
                    *-------------------*
                    | SUBSTR (TDTE,7,2) |
                    |     = SUBSTR      |
                    |    (DTE,1,2)      |
                    *-------------------*
                              |
                              |
                              |
                              |  /
                            -----
                           / 2.11
```

CHART TITLE - PROCEDURE DLITPLI (CRSEPCB,INSTPCB) OPTIONS (MAIN)

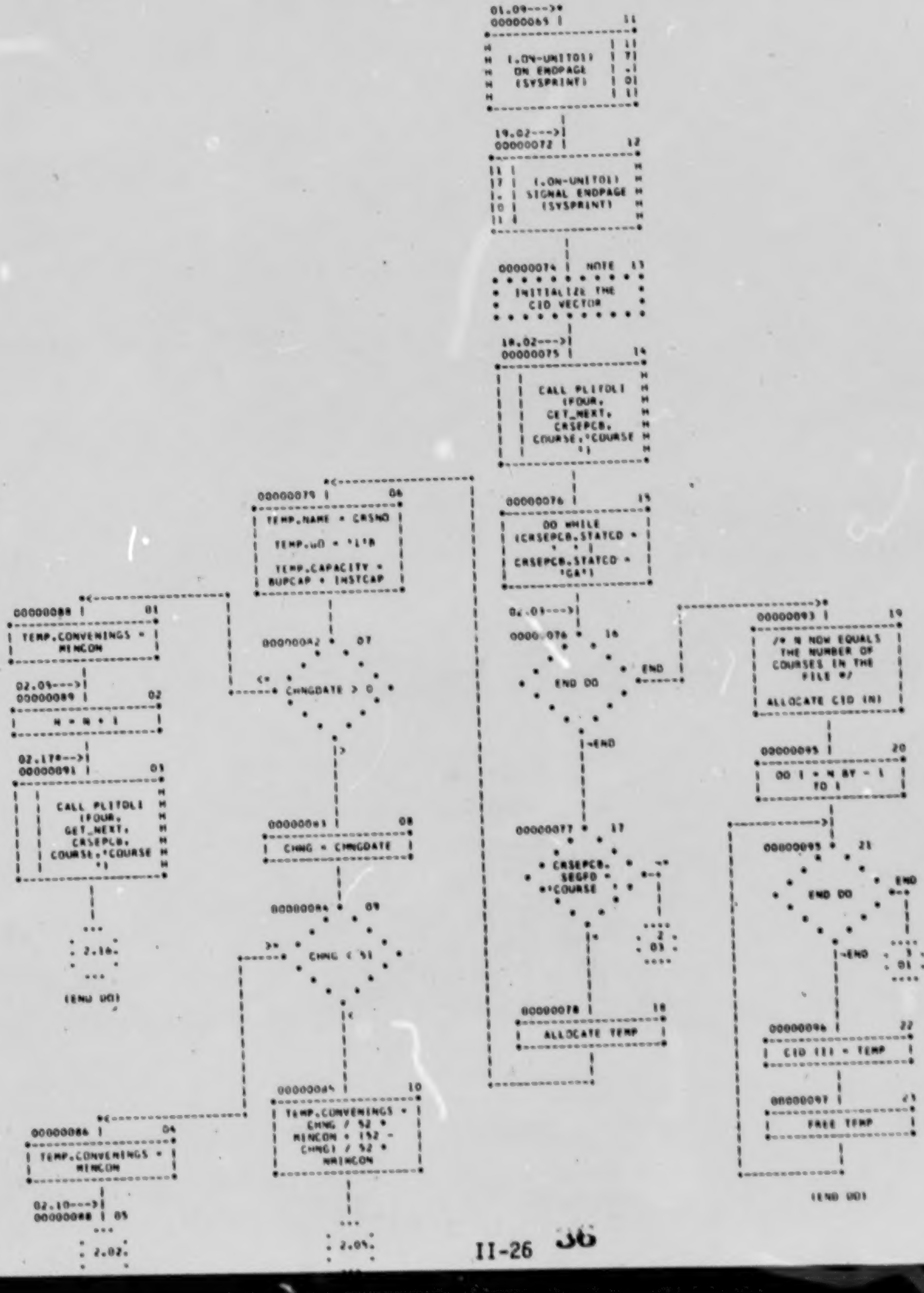
01.09--->
00000065 11
(.ON-UNIT01) ON ENDPAGE (SYSPRINT)
19.02--->
00000072 12
(.ON-UNIT01) SIGNAL ENDPAGE (SYSPRINT)
00000074 NOTE 13
INITIALIZE THE CID VECTOR
18.02--->
00000075 14
CALL PLITDLI (FOUR, GET_NEXT, CRSEPCB, COURSE,'COURSE ')
00000076 15
DO WHILE (CRSEPCB.STATCD = ' ' | CRSEPCB.STATCD = 'GA')
02.03--->
00000076 16
END DO
END
¬END
00000077 17
CRSEPCB. SEGFD = 'COURSE'
¬=
=
2 03
00000078 18
ALLOCATE TEMP
00000079 06
TEMP.NAME = CRSNO
TEMP.UD = '1'B
TEMP.CAPACITY = BUPCAP + INSTCAP
00000082 07
CHNGDATE > 0
<=
>
00000083 08
CHNG = CHNGDATE
00000084 09
CHNG < 51
>=
<
00000085 10
TEMP.CONVENINGS = CHNG / 52 * MINCON + (52 - CHNG) / 52 * MAXINCON
2.05
00000088 01
TEMP.CONVENINGS = MINCON
02.05--->
00000089 02
N = N + 1
02.17--->
00000091 03
CALL PLITDLI (FOUR, GET_NEXT, CRSEPCB, COURSE,'COURSE ')
2.16
(END DO)
00000086 04
TEMP.CONVENINGS = MINCON
02.10--->
00000088 05
2.02
00000093 19
/* N NOW EQUALS THE NUMBER OF COURSES IN THE FILE */
ALLOCATE CID (N)
00000095 20
DO I = N BY - 1 TO 1
00000095 21
END DO
END
¬END
3 01
00000096 22
CID (I) = TEMP
00000097 23
FREE TEMP
(END DO)

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CHART TITLE - PROCEDURE DLI1PLI (CRSEPCB,INSTPCB) OPTIONS (MAIN)

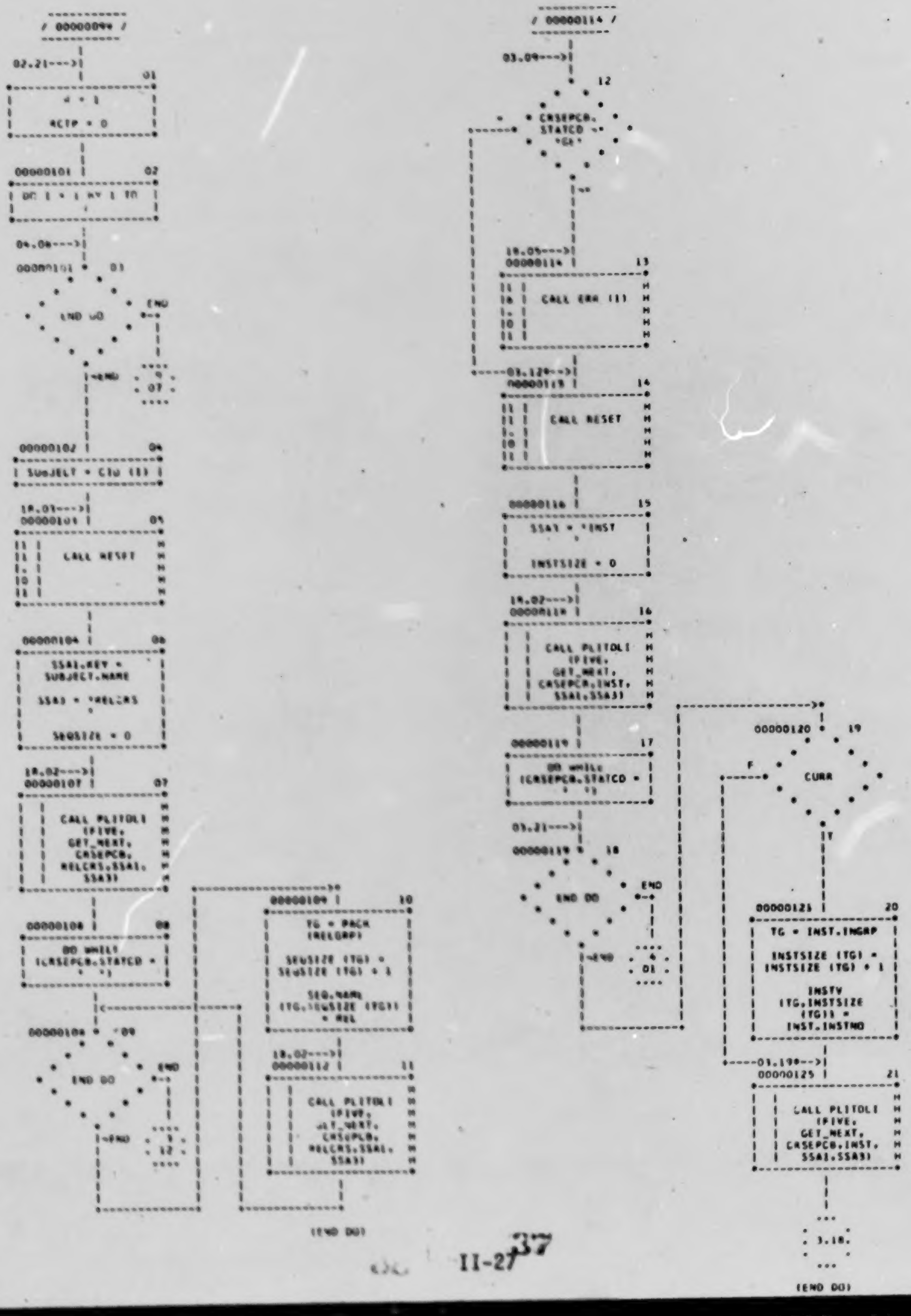

/ 00000099 /
02.21--->
01
N = 1
ACTP = 0
00000101 02
DO I = 1 BY 1 TO
04.06--->
00000101 03
END DO
END
<END
9
07
00000102 04
SUBJECT = CIU (I)
18.03--->
00000103 05
CALL RESET
00000104 06
SSA1.KEY = SUBJECT.NAME
SSA3 = 'RELCRS '
SEQSIZE = 0
18.02--->
00000107 07
CALL PLITDLI (FIVE, GET_NEXT, CRSEPCB, RELCRS,SSA1, SSA3)
00000108 08
DO WHILE (CRSEPCB.STATCD = ' ')
00000108 09
END DO
END
<END
9
12
00000109 10
TG = PACK (RELGRP)
SEQSIZE (TG) = SEQSIZE (TG) + 1
SEQ.NAME (TG,SEQSIZE (TG)) = REL
18.02--->
00000112 11
CALL PLITDLI (FIVE, GET_NEXT, CRSEPCB, RELCRS,SSA1, SSA3)
(END DO)
/ 00000114 /
03.09--->
12
CRSEPCB. STATCD ¬= 'GE'
=
¬=
18.05--->
00000114 13
CALL ERR (1)
03.12=-->
00000115 14
CALL RESET
00000116 15
SSA3 = 'INST '
INSTSIZE = 0
18.02--->
00000118 16
CALL PLITDLI (FIVE, GET_NEXT, CRSEPCB,INST, SSA1,SSA3)
00000119 17
DO WHILE (CRSEPCB.STATCD = ' ')
03.21--->
00000119 18
END DO
END
<END
4
01
00000120 19
CURR
F
T
00000121 20
TG = INST.INGRP
INSTSIZE (TG) = INSTSIZE (TG) + 1
INSTV (TG,INSTSIZE (TG)) = INST.INSTNO
03.19=-->
00000125 21
CALL PLITDLI (FIVE, GET_NEXT, CRSEPCB,INST, SSA1,SSA3)
3.18.
(END DO)

CHART TITLE - PROCEDURE DLITPLI (CRSEPCB,INSTPCB) OPTIONS (MAIN)

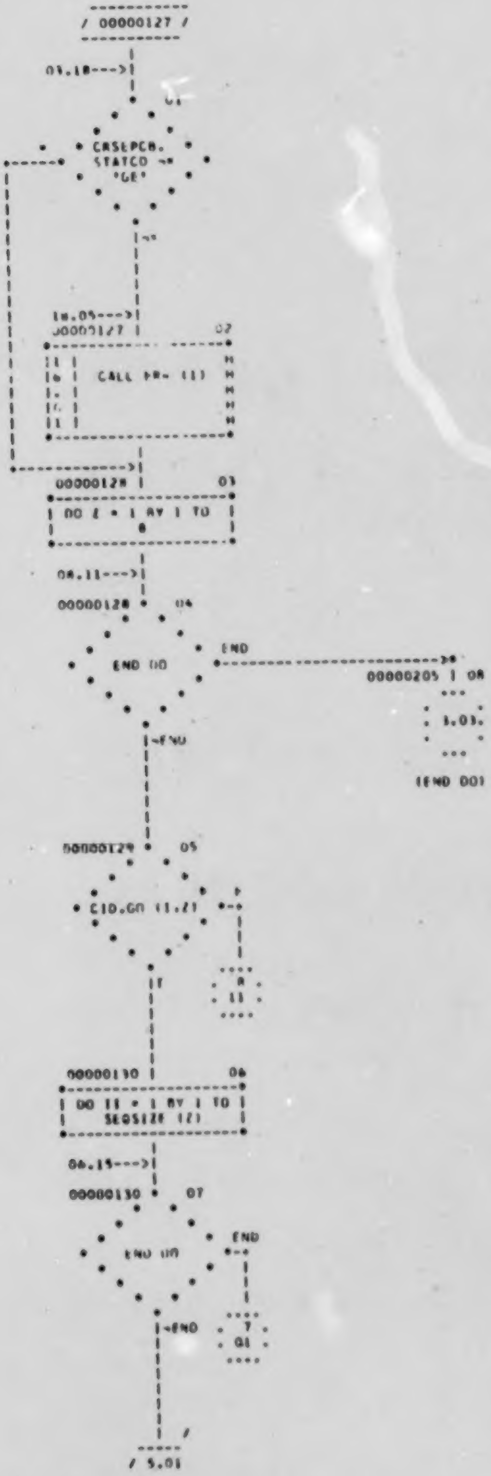
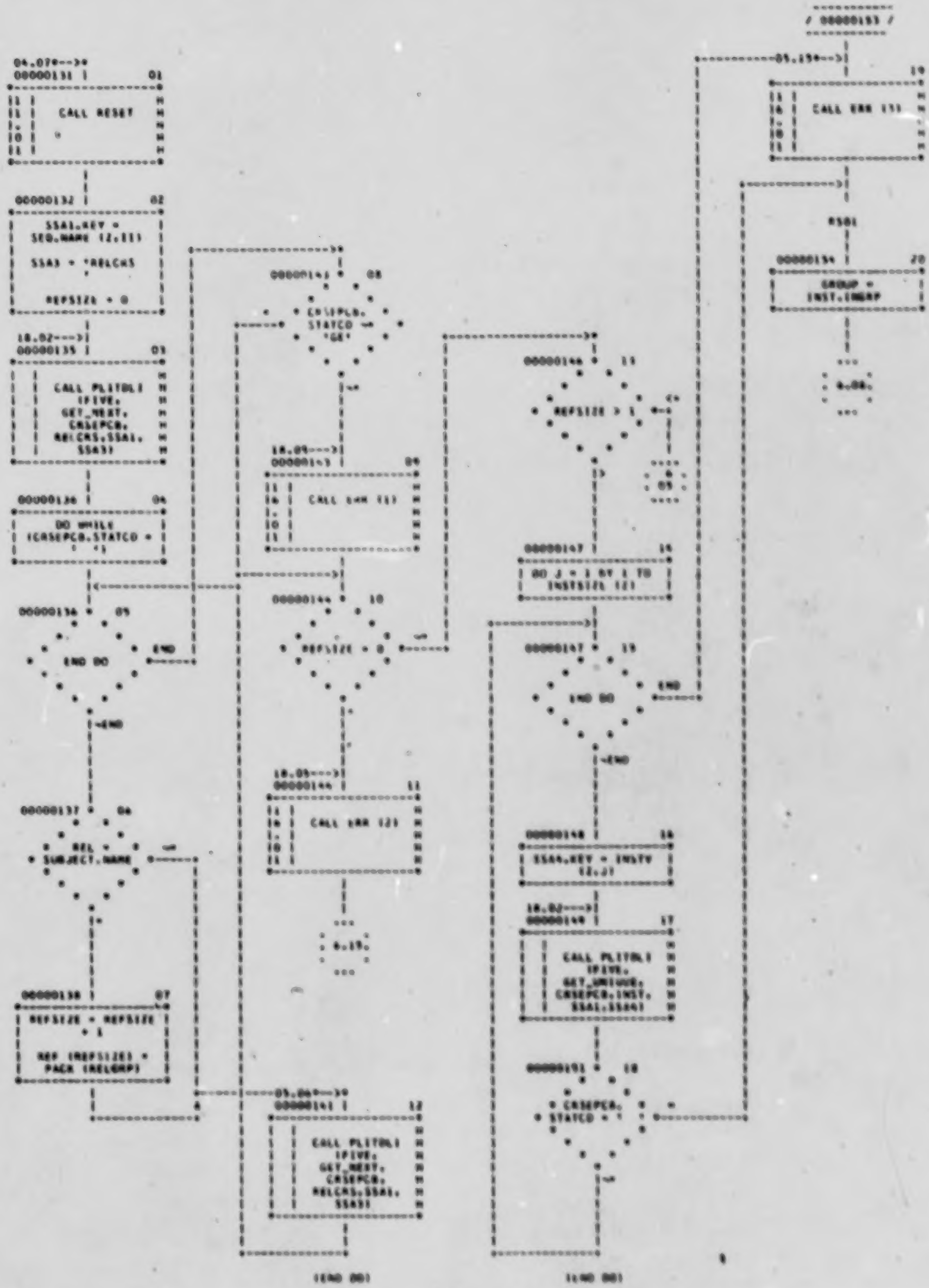

/ 00000127 /
03.18--->
01
CRSEPCB.
STATCO ¬=
'GE'
¬=
18.05--->
00000127
02
CALL PR= (1)
00000128
03
DO I = 1 BY 1 TO
8
08.11--->
00000128
04
END DO
END
00000205
08
3.03.
(END DO)
¬END
00000129
05
CID.GN (1.2)
T
F
8
11
00000130
06
DO II = 1 BY 1 TO
SEQSIZE (2)
06.15--->
00000130
07
END DO
END
¬END
7
01
/ 5.01

CHART TITLE - PROCEDURE DLITPLI (CASEPCB,INSTPCB) OPTIONS (MAIN)


00000153
04.07*-->
00000131 01
CALL RESET
00000132 02
SSA1.KEY = SEQ.NAME (2,11)
SSA3 = 'RELCHS '
REFSIZE = 0
18.02--->
00000135 03
CALL PLITDLI (FIVE, GET_NEXT, CASEPCB, RELCHS,SSA1, SSA3)
00000136 04
DO WHILE (CASEPCB.STATCO = ' ')
00000136 05
END DO
END
-END
00000137 06
REL = SUBJECT.NAME
=
≠
00000138 07
REFSIZE = REFSIZE + 1
REF (REFSIZE) = PACK (RELGRP)
00000143 08
CASEPCB. STATCO ≠ 'GE'
≠
18.09--->
00000143 09
CALL ERR (1)
00000144 10
REFSIZE = 0
≠
=
18.09--->
00000144 11
CALL ERR (2)
6.19
05.06*-->
00000141 12
CALL PLITDLI (FIVE, GET_NEXT, CASEPCB, RELCHS,SSA1, SSA3)
(END DO)
00000146 13
REFSIZE > 1
<=
>
6
05
00000147 14
DO J = 1 BY 1 TO INSTSIZE (2)
00000147 15
END DO
END
-END
00000148 16
SSA4.KEY = INSTV (2,J)
18.02--->
00000149 17
CALL PLITDLI (FIVE, GET_UNIQUE, CASEPCB,INST, SSA1,SSA4)
00000151 18
CASEPCB. STATCO = ' '
=
≠
(END DO)
05.15*-->
19
CALL ERR (3)
RS01
00000154 20
GROUP = INST.INGRP
6.08

AUTOFLOW CHART SET -

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CHART TITLE - PROCEDURE ULITPLI (CRSEPCH,INSTPCH) OPTIONS (MAIN)

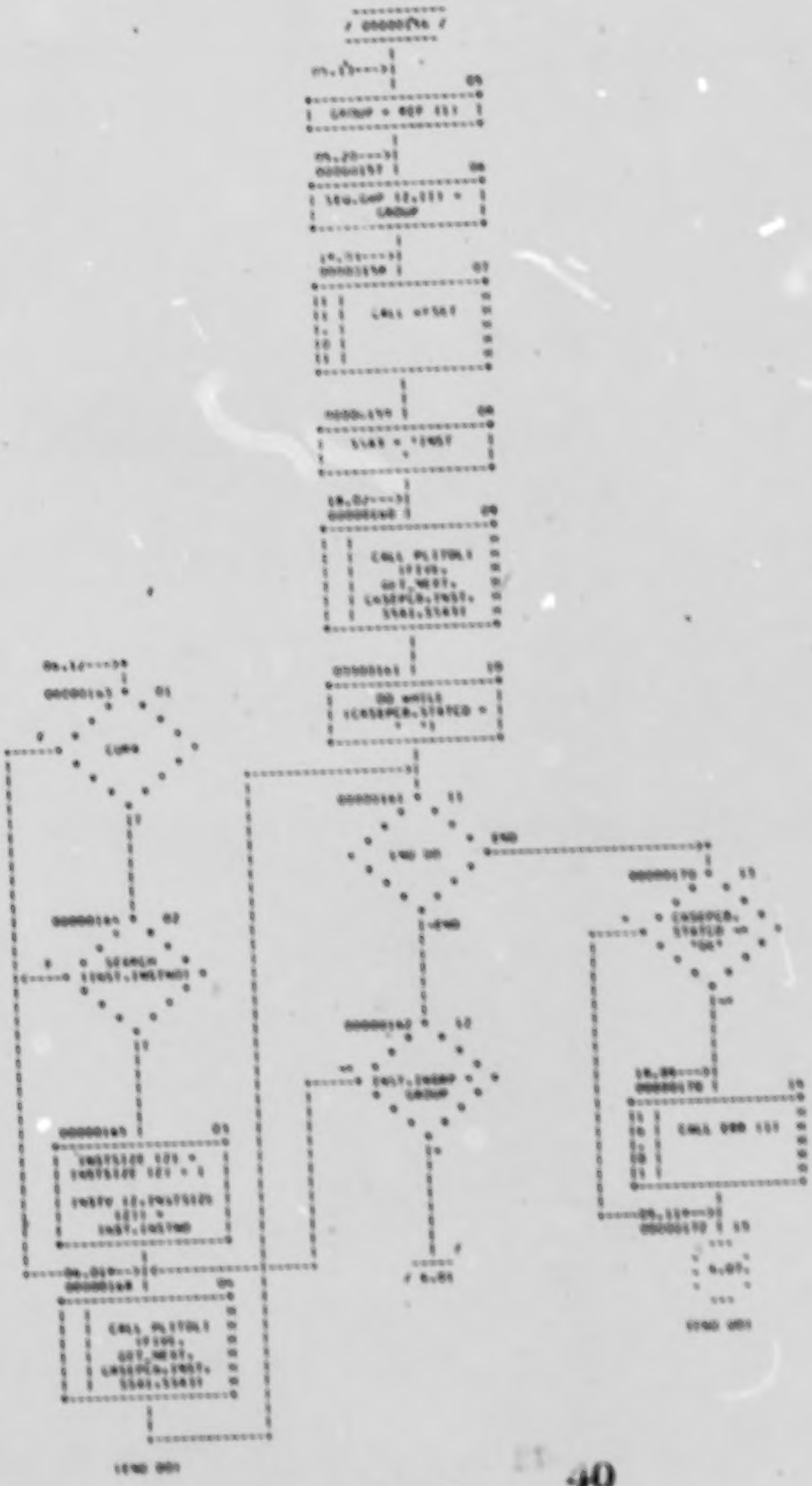


CHART TITLE - PROCEDURE BLITPLI (CRSEPCB,INSTPCB) OPTIONS (MAIN)

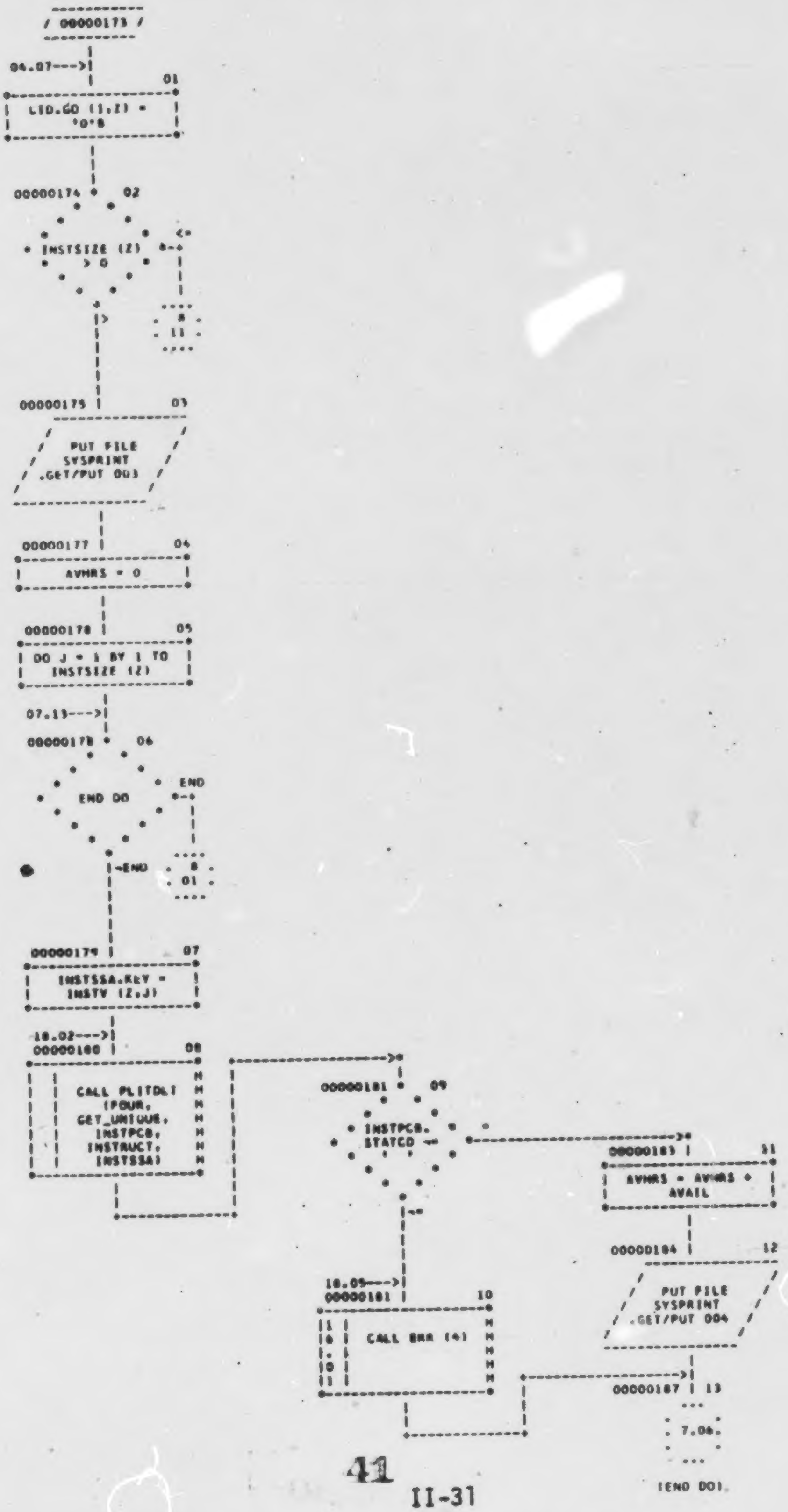

/ 00000173 /
04.07--->
01
LID.GO (1,Z) = '0'B
00000174 02
INSTSIZE (Z) > 0
<=
>
8
11
00000175 03
PUT FILE SYSPRINT .GET/PUT 003
00000177 04
AVHRS = 0
00000178 05
DO J = 1 BY 1 TO INSTSIZE (Z)
07.13--->
00000178 06
END DO
END
<-END
8
01
00000179 07
INSTSSA.KEY = INSTV (Z,J)
18.02--->
00000180 08
CALL PLITDLI (FOUR, GET_UNIQUE, INSTPCB, INSTRUCT, INSTSSA)
00000181 09
INSTPCB. STATCD -=
<=
00000183 11
AVHRS = AVHRS + AVAIL
00000184 12
PUT FILE SYSPRINT .GET/PUT 004
18.05--->
00000181 10
CALL ERR (4)
16.01
00000187 13
7.06.
(END DO).

CHART TITLE - PROCEDURE DLITPLI (CASEPCB,INSTPCB) OPTIONS (MAIN)

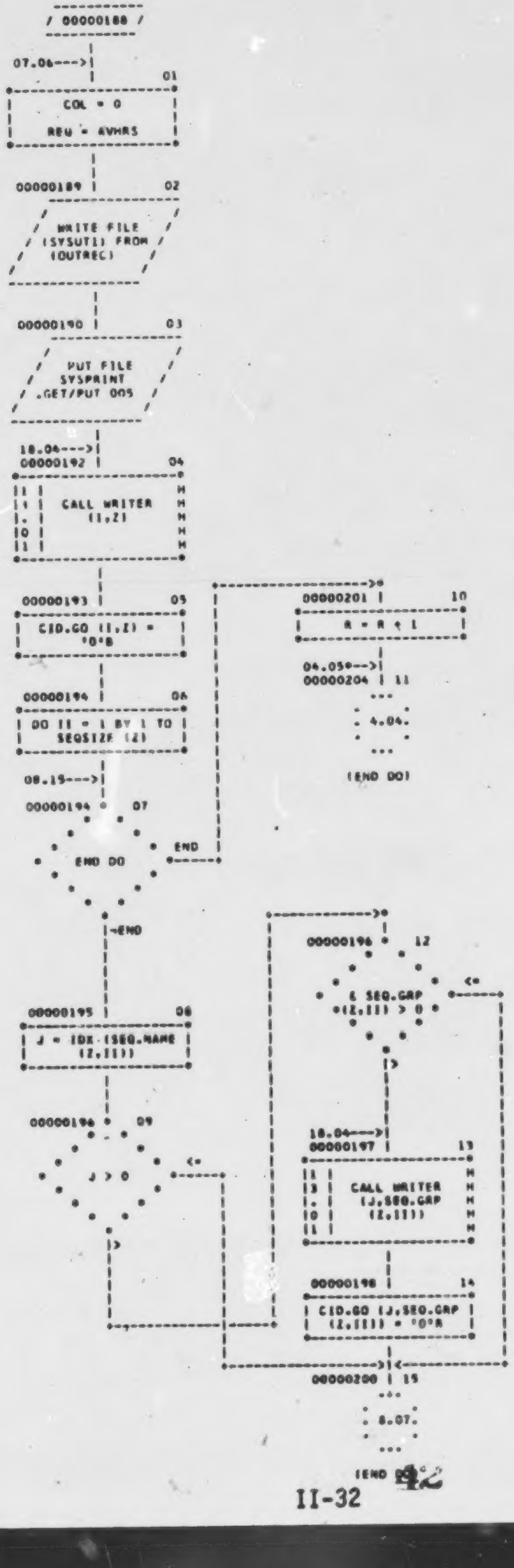

/ 00000188 /
07.06--->
01
COL = 0
REU = AVHRS
00000189
02
WRITE FILE (SYSUT1) FROM (OUTREC)
00000190
03
PUT FILE SYSPRINT .GET/PUT 005
18.04--->
00000192
04
1.4.01
CALL WRITER (1,Z)
00000193
05
CID.GO (1,Z) = '0'B
00000194
06
DO II = 1 BY 1 TO SEQSIZE (Z)
08.15--->
00000194
07
END DO
END
¬END
00000195
08
J = IDX (SEQ.NAME (Z,II))
00000196
09
J > 0
<=
>
00000201
10
R = R + 1
04.05*-->
00000204
11
4.04.
(END DO)
00000196
12
& SEQ.GRP (Z,II) > 0
<=
>
18.04--->
00000197
13
13.01
CALL WRITER (J,SEQ.GRP (Z,II))
00000198
14
CID.GO (J,SEQ.GRP (Z,II)) = '0'B
00000200
15
8.07.
(END DO)

CHART TITLE - PROCEDURE OLITPLI (CRSEPCB,INSTPCB) OPTIONS (MAIN)

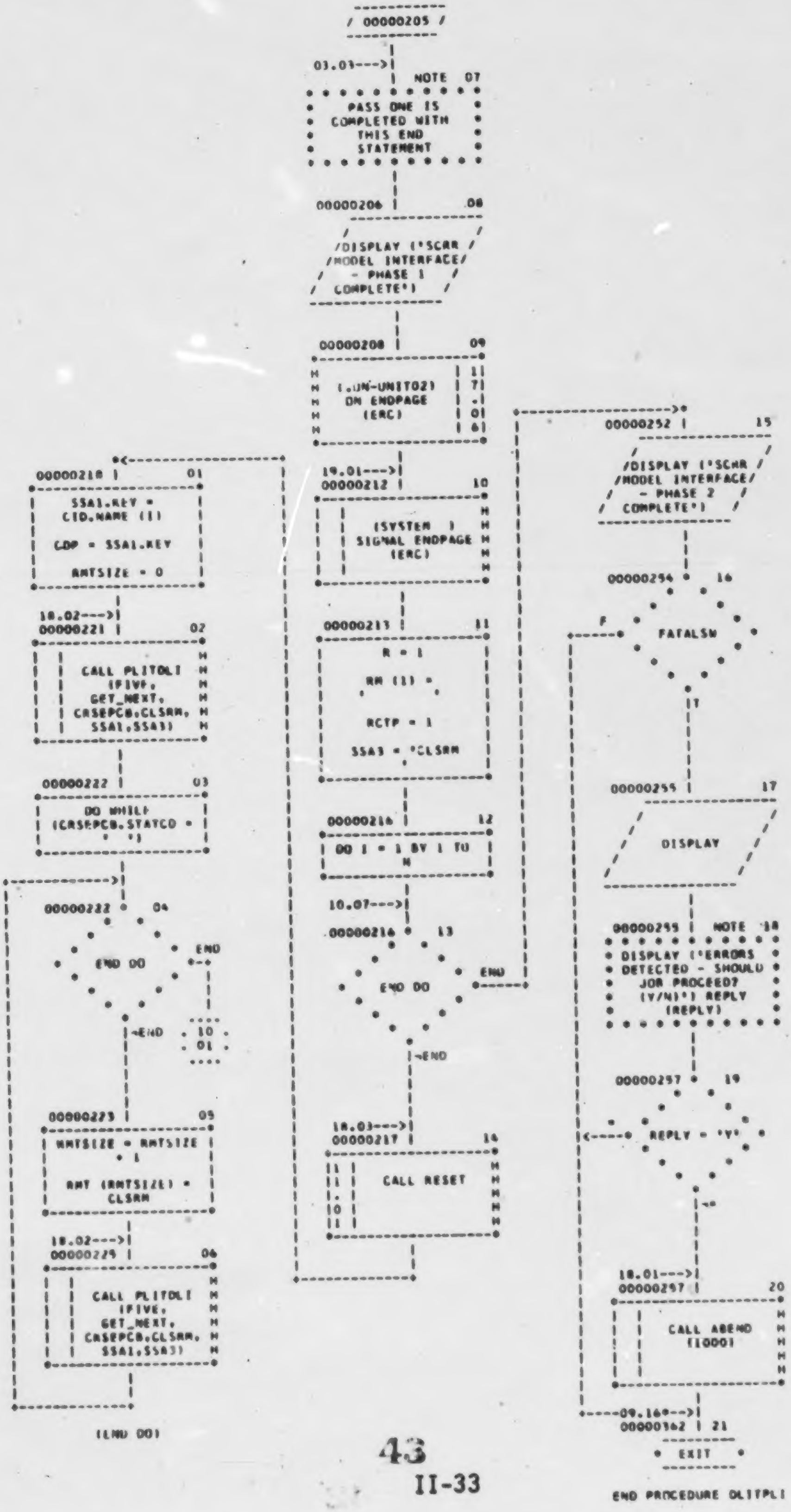
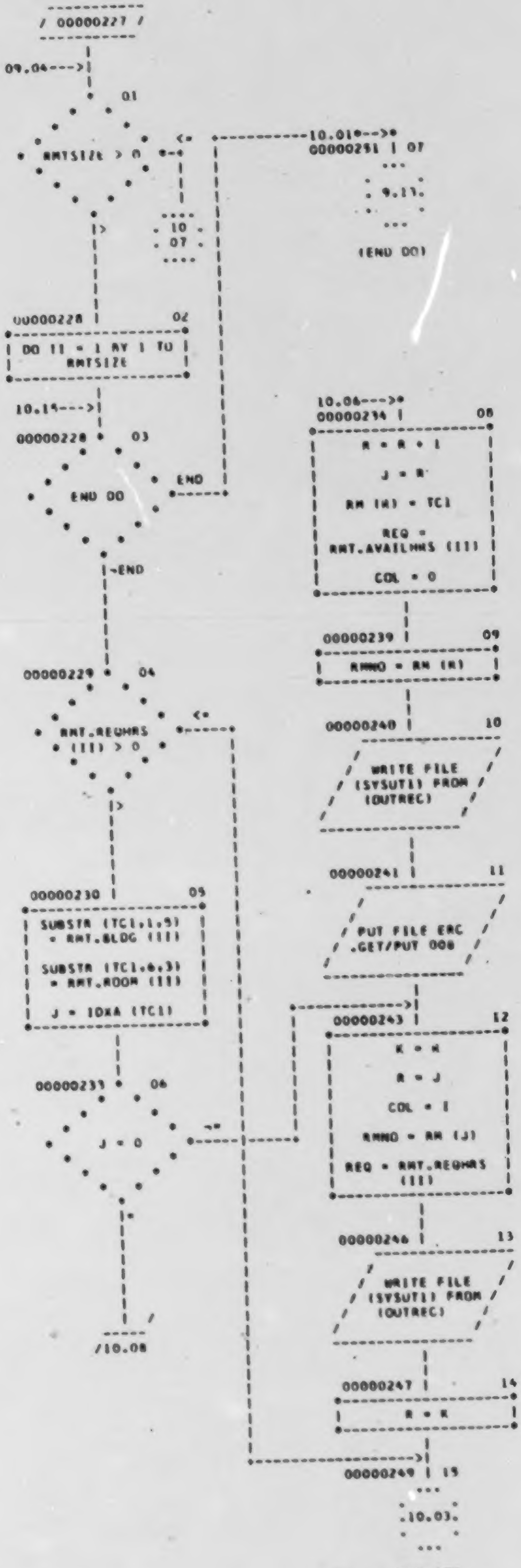

/ 00000205 /
03.03--->
NOTE 07
PASS ONE IS COMPLETED WITH THIS END STATEMENT
00000206 08
/DISPLAY ('SCRR /MODEL INTERFACE/ - PHASE 1 COMPLETE')
00000208 09
(.ON-UNIT02) ON ENDPAGE (ERC)
17.01.6
19.01--->
00000212 10
(SYSTEM) SIGNAL ENDPAGE (ERC)
00000213 11
R = 1
RM (1) = ' '
RCTP = 1
SSA3 = 'CLSRM '
00000214 12
DO I = 1 BY 1 TO N
10.07--->
00000214 13
END DO
END
¬END
18.03--->
00000217 14
CALL RESET
11.01
00000218 01
SSA1.KEY = CID.NAME (I)
CDP = SSA1.KEY
RMTSIZE = 0
18.02--->
00000221 02
CALL PLITDLI (FIVE, GET_NEXT, CRSEPCB,CLSRM, SSA1,SSA3)
00000222 03
DO WHILE (CRSEPCB.STATCD = ' ')
00000222 04
END DO
END
¬END
10 . 01
00000223 05
RMTSIZE = RMTSIZE + 1
RMT (RMTSIZE) = CLSRM
18.02--->
00000224 06
CALL PLITDLI (FIVE, GET_NEXT, CRSEPCB,CLSRM, SSA1,SSA3)
(END DO)
00000252 15
/DISPLAY ('SCRR /MODEL INTERFACE/ - PHASE 2 COMPLETE')
00000254 16
FATALSW
F
T
00000255 17
DISPLAY
00000255 NOTE 18
DISPLAY ('ERRORS DETECTED - SHOULD JOB PROCEED? (Y/N)') REPLY (REPLY)
00000257 19
REPLY = 'Y'
¬=
18.01--->
00000257 20
CALL ABEND (1000)
09.16---->
00000262 21
EXIT
END PROCEDURE OLITPLI

CHART TITLE - PROCEDURE DLITPLI (CRSEPCB,INSTPCB) OPTIONS (MAIN)


00000227
09.04--->
01
RMTSIZE > 0
<*
10.01*-->*
00000251 07
9.11.
(END 00)
>
10
07
00000228 02
DO II = 1 BY 1 TO RMTSIZE
10.15--->
00000228 03
END DO
END
¬END
10.06--->*
00000234 08
R = R + 1
J = R
RM (R) = TC1
REQ = RMT.AVAILHRS (II)
COL = 0
00000239 09
RMNO = RM (R)
00000229 04
RMT.REQHRS (II) > 0
<*
>
00000240 10
WRITE FILE (SYSUT1) FROM (OUTREC)
00000241 11
PUT FILE ERC .GET/PUT 008
00000230 05
SUBSTR (TC1,1,5) = RMT.BLDG (II)
SUBSTR (TC1,6,3) = RMT.ROOM (II)
J = IDXA (TC1)
00000243 12
K = K
R = J
COL = 1
RMNO = RM (J)
REQ = RMT.REQHRS (II)
00000233 06
J = 0
¬=
=
/10.08
00000246 13
WRITE FILE (SYSUT1) FROM (OUTREC)
00000247 14
R = K
00000249 15
10.03.
(END 00)

```
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CHART TITLE - PROCEDURE RESET


                                      -----------
                                     / 00000261 /
                                     -----------

                                 03.05*-->*

                                        RESET

                                          *
                                 00000263 |          01
                                *-------------------*
                                | SAVE = SSA1.KEY   |
                                |                   |
                                | SSA1.KEY = '0000' |
                                *-------------------*
                                          |
                                 18.02--->|
                                 00000265 |          02
                                *-------------------*
                                | |                 H
                                | |  CALL PLITDLI   H
                                | |     (FOUR,      H
                                | |  GET_UNIQUE,    H
                                | |    CRSEPCB,     H
                                | |  COURSE,SSA1)   H
                                *-------------------*
                                          |
                                          |
                                 00000266 |          03
                                *-------------------*
                                | SSA1.KEY = SAVE   |
                                *-------------------*
                                          |
                                          |
                                 00000267 | 04
                                      ---------
                                     * EXIT   *
                                      ---------

                                 END PROCEDURE RESET
```

CHART TITLE - PROCEDURE IDXA (GUY) RETURNS (FIXED BIN (16))

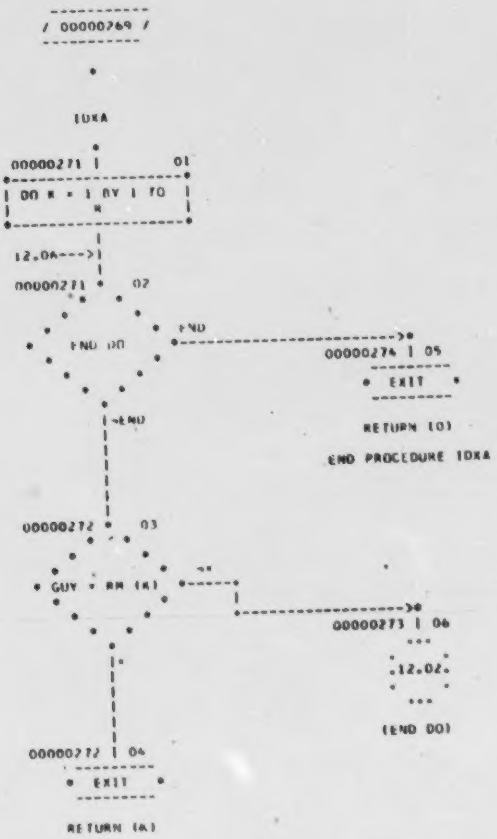
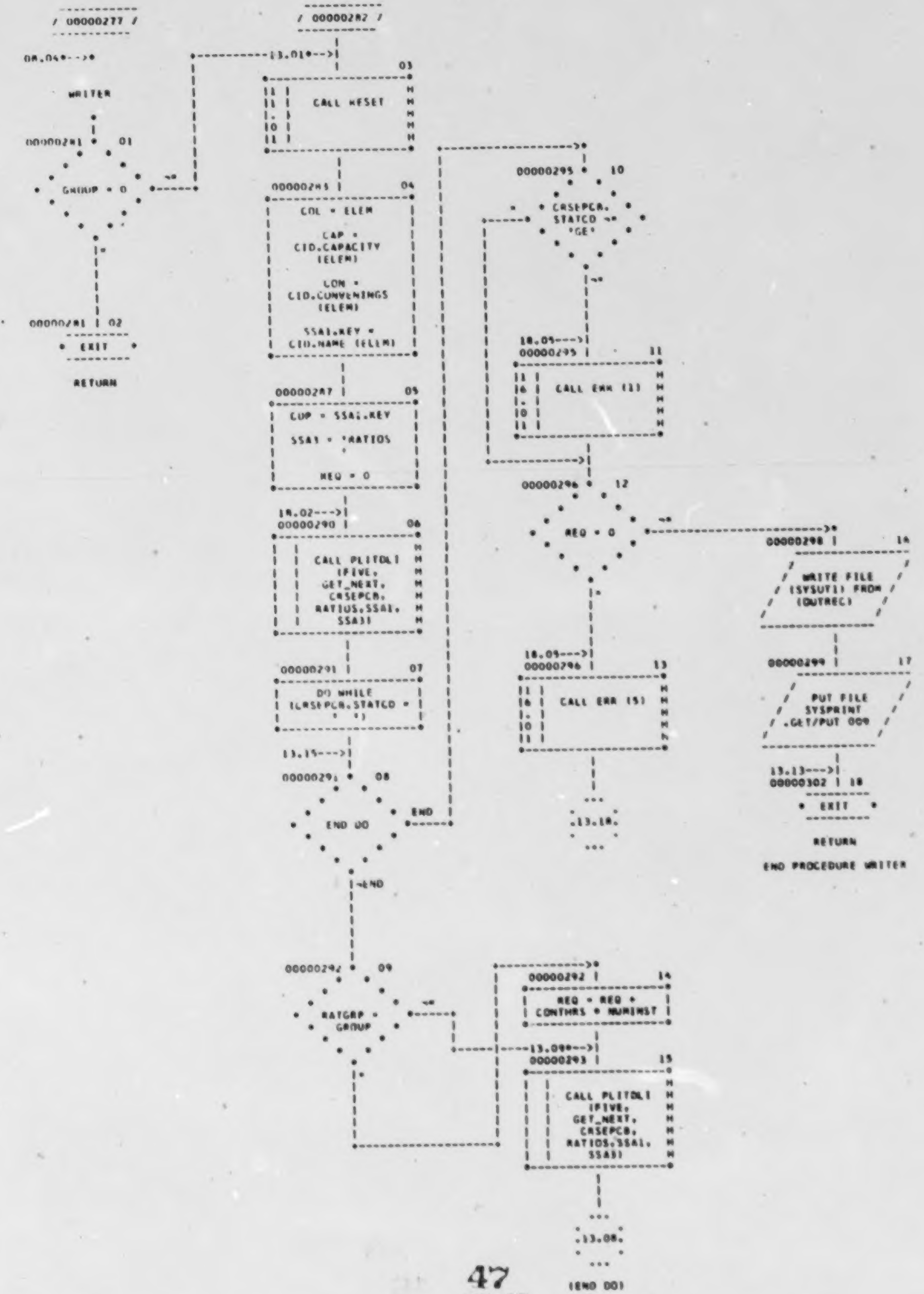

/ 00000269 /
IDXA
00000271 01
DO K = 1 BY 1 TO N
12.0A--->
00000271 02
END DO
END
¬END
00000274 05
EXIT
RETURN (0)
END PROCEDURE IDXA
00000272 03
GUY = RM (K)
¬=
=
00000273 06
12.02.
(END DO)
00000272 04
EXIT
RETURN (K)

CHART TITLE - PROCEDURE WRITER (ELEM,GROUP)


/ 00000277 /
08.04*-->*
WRITER
00000281 01
GROUP = 0
¬=
=
00000281 02
EXIT
RETURN
/ 00000282 /
13.01*-->
03
CALL RESET
00000283 04
COL = ELEM
CAP = CID.CAPACITY (ELEM)
CON = CID.CONVENINGS (ELEM)
SSA1.KEY = CID.NAME (ELEM)
00000287 05
CUP = SSA1.KEY
SSA3 = 'RATIOS '
REQ = 0
18.02--->
00000290 06
CALL PLITDLI (FIVE, GET_NEXT, CASEPCB, RATIOS,SSA1, SSA3)
00000291 07
DO WHILE (CASEPCB.STATCD = ' ')
13.15--->
00000291 08
END DO
END
¬END
00000292 09
RATGRP = GROUP
¬=
=
00000295 10
CASEPCB. STATCD ¬= 'GE'
=
¬=
18.05--->
00000295 11
CALL ERR (1)
00000296 12
REQ = 0
¬=
=
18.05--->
00000296 13
CALL ERR (5)
.13.18.
00000292 14
REQ = REQ + CONTHRS * NUMINST
13.09*-->
00000293 15
CALL PLITDLI (FIVE, GET_NEXT, CASEPCB, RATIOS,SSA1, SSA3)
.13.08.
(END DO)
00000298 16
WRITE FILE (SYSUT1) FROM (OUTREC)
00000299 17
PUT FILE SYSPRINT .GET/PUT 009
13.13--->
00000302 18
EXIT
RETURN
END PROCEDURE WRITER

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```
CHART TITLE - PROCEDURE IDX (THING) RETURNS (FIXED BIN (16))


      ------------
      : 00000305 /
     ------------

           *

          IDX

           *
 00000307  |          01
*---------------------*
| DO K = 1 BY 1 TO    |
|         N           |
*---------------------*
           |
 14.06---->|
           |
 00000307  *    02
         *   *
       *       *
     *           *  END
   *    END DO    *---------------------------->*
     *           *                    00000310 | 05
       *       *                         ----------
         *   *                           *  EXIT   *
           *                             ----------
           |¬END
           |                             RETURN (0)
           |
           |                           END PROCEDURE IDX
           |
           |
  00000308 *    03
         *   *
       *       *
     *  THING =  *   ¬=
   * CID.NAME (K)  *-----*
     *           *       |
       *       *         *---------------------->*
         *   *                            00000309 | 06
           *                                   ...
           |=                                 .   .
           |                                  .14.02.
           |                                  .   .
           |                                   ...
           |
           |                                 (END 00)
  00000308 | 04
       ----------
      *  EXIT   *
       ----------

       RETURN (K)
```

CHART TITLE - PROCEDURE SEARCH (DUDE) RETURNS (BIT (1))

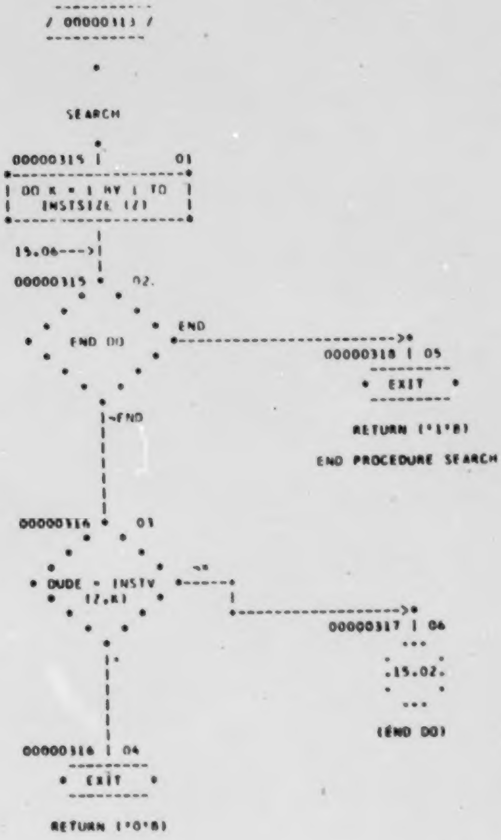
/ 00000313 /
SEARCH
00000315 | 01
DO K = 1 BY 1 TO INSTSIZE (Z)
15.06--->
00000315 02.
END DO
END
00000318 | 05
EXIT
RETURN ('1'B)
END PROCEDURE SEARCH
¬END
00000316 03
DUDE = INSTV (Z,K)
¬=
00000317 | 06
15.02.
(END DO)
=
00000316 | 04
EXIT
RETURN ('0'B)

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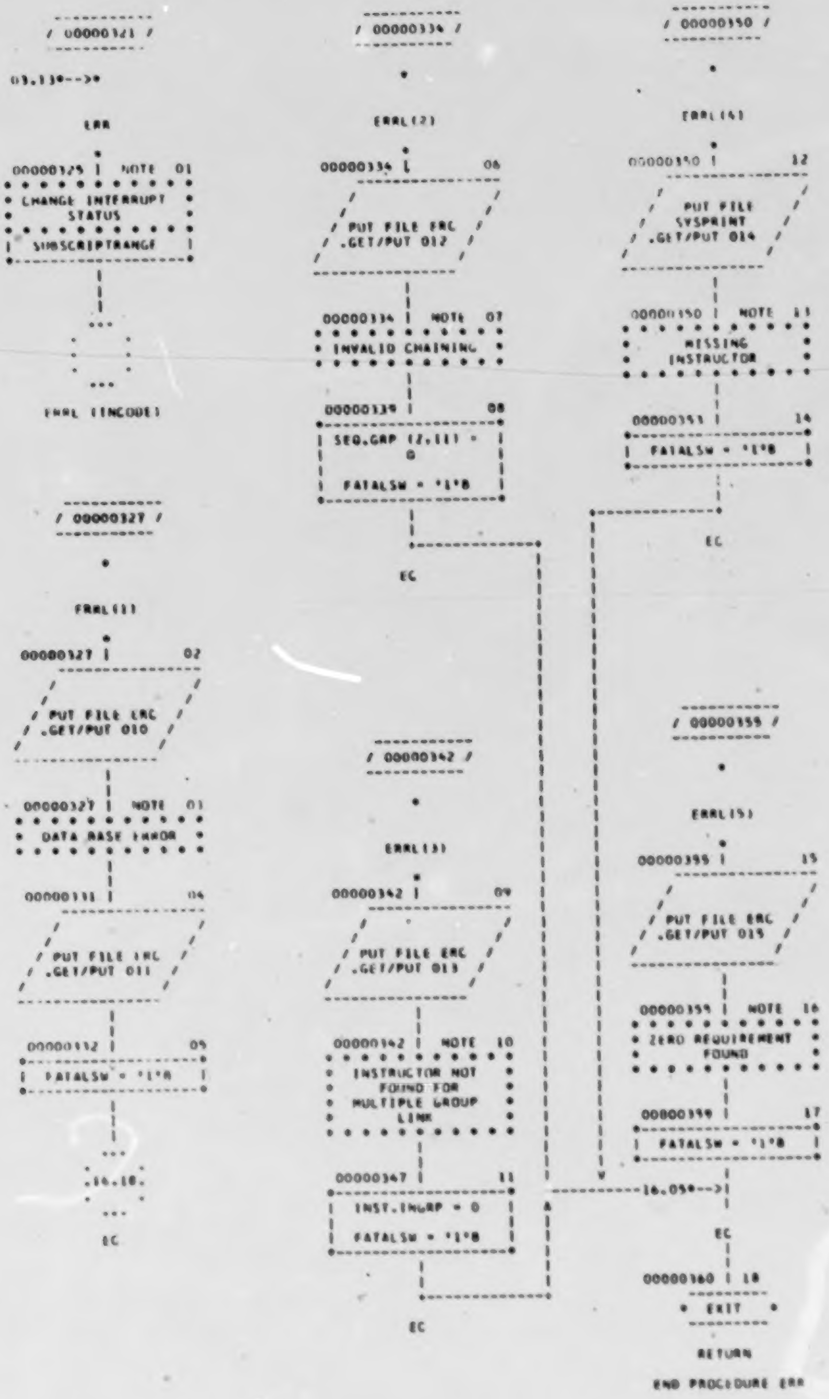
CHART TITLE - PROCEDURE ERR (INCODE)


/ 00000321 /
03.13*-->*
ERR
00000325 NOTE 01
CHANGE INTERRUPT STATUS
SUBSCRIPTRANGE
ERRL (INCODE)
/ 00000327 /
ERRL(1)
00000327 02
PUT FILE ERC .GET/PUT 010
00000327 NOTE 03
DATA BASE ERROR
00000331 04
PUT FILE ERC .GET/PUT 011
00000332 05
FATALSW = '1'B
.16.18.
EC
/ 00000334 /
ERRL(2)
00000334 06
PUT FILE ERC .GET/PUT 012
00000334 NOTE 07
INVALID CHAINING
00000339 08
SEQ.GRP (2,11) = 0
FATALSW = '1'B
EC
/ 00000342 /
ERRL(3)
00000342 09
PUT FILE ERC .GET/PUT 013
00000342 NOTE 10
INSTRUCTOR NOT FOUND FOR MULTIPLE GROUP LINK
00000347 11
INST.INGRP = 0
FATALSW = '1'B
EC
/ 00000350 /
ERRL(4)
00000350 12
PUT FILE SYSPRINT .GET/PUT 014
00000350 NOTE 13
MISSING INSTRUCTOR
00000353 14
FATALSW = '1'B
EC
/ 00000355 /
ERRL(5)
00000355 15
PUT FILE ERC .GET/PUT 015
00000355 NOTE 16
ZERO REQUIREMENT FOUND
00000359 17
FATALSW = '1'B
16.05*-->
EC
00000360 18
EXIT
RETURN
END PROCEDURE ERR

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```
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CHART TITLE - ON-UNIT ACTION BLOCKS



                       -----------
                      / 00000065 /
                      -----------

                    02.11*-->*

                   .ON-UNIT01

                              *
                    00000065  |  NOTE  01
                   * * * * * * * * * * * *
                   *     ON ENDPAGE      *
                   *     (SYSPRINT)      *
                   *                     *
                   *       BEGIN         *
                   * * * * * * * * * * * *
                              |
                              |
                    00000066  |          02
                        ---------------
                       /             /
                      /   PUT FILE  /
                     /    SYSPRINT  /
                    / .GET/PUT 001 /
                   /             /
                   ---------------
                              |
                              |
                    00000069  |          03
                        ---------------
                       /             /
                      /   PUT FILE  /
                     /    SYSPRINT  /
                    / .GET/PUT 002 /
                   /             /
                   ---------------
                              |
                              |
                    00000070  |          04
                   *-----------------------*
                   | PAGENO = PAGENO +     |
                   |         1             |
                   *-----------------------*
                              |
                              |
                    00000071  | 05
                         ---------
                       *  EXIT   *
                         ---------

                     END .ON-UNIT01



                        -----------
                       / 00000208 /
                       -----------

                    09.09--->*

                   .ON-UNIT02

                              *
                    00000208  |  NOTE  06
                   * * * * * * * * * * * *
                   * ON ENDPAGE (ERC)    *
                   *                     *
                   *       BEGIN         *
                   * * * * * * * * * * * *
                              |
                              |
                    00000209  |          07
                        ---------------
                       /             /
                      /             /
                     / PUT FILE ERC /
                    / .GET/PUT 006 /
                   /             /
                   ---------------
                              |
                              |
                    00000210  |          08
                        ---------------
                       /             /
                      /             /
                     / PUT FILE ERC /
                    / .GET/PUT 007 /
                   /             /
                   ---------------
                              |
                              |
                    00000211  | 09
                         ---------
                       *  EXIT   *
                         ---------

                     END .ON-UNIT02
```

```
           /* SCRR MODEL INTERFACE - SECTION II */                                          PAGE

 STMT LEVEL NEST
                              /* SCRR MODEL INTERFACE - SECTION II */
    1                SCRR2:   PROCEDURE(PARM) OPTIONS(MAIN);
    2     1                   DECLARE
                                PARM CHAR(2),
                                SYSUT1 FILE STREAM OUTPUT
                                  ENVIRONMENT(F(800,80) BUFFERS(1)),
                                1 RESOURC(500) STATIC EXTERNAL,
                                  2 NAME CHAR(8),
                                  2 AVAIL FIXED DEC(7,1),
                                1 COURSES(250) STATIC EXTERNAL,
                                  2 CDP CHAR(4),
                                  2 SIZE FIXED BIN(16),
                                  2 MINCON FIXED DEC(3,0),
                                  2 CAPACITY FIXED DEC(3,0),
                                  2 UNITS(15),
                                    3 RNAME CHAR(8),
                                    3 REQS FIXED DEC(7,1),
                                1 INREC STATIC EXTERNAL,
                                  2 TYPE FIXED BIN(16),
                                  2 ROW FIXED BIN(16),
                                  2 COL FIXED BIN(16),
                                  2 CID CHAR(4),
                                  2 RMNO CHAR(8),
                                  2 REQ FIXED DEC(7,1),
                                  2 CAP FIXED DEC(3,0),
                                  2 CON FIXED DEC(3,0),
                                DATE BUILTIN,
                                TDTE CHAR(6) STATIC,
                                DTE CHAR(8) STATIC INIT('  /  /  '),
                                PAGENO FIXED DEC(3,0) STATIC INIT(1),
                                (IMAX,CMAX,RMAX,I,K) FIXED BIN(16) STATIC INIT(0),
                                BLNKDOT ENTRY(CHAR(8)) RETURNS(FIXED),
                                IHESARC ENTRY(FIXED BIN(16)) RETURNS(FIXED),
                                IHESRTC ENTRY(CHAR(80),CHAR(80),FIXED BIN(16),FIXED BIN(16),
                                  ENTRY) RETURNS(FIXED),
                                RC FIXED BIN(16) STATIC,
                                (SORT,RECORD) CHAR(80) STATIC,
                                P POINTER STATIC EXTERNAL,
                                DSTRING CHAR(32) BASED(P);
    3     1                   OPEN FILE(SYSPRINT) LINESIZE(132),FILE(SYSUT1) LINESIZE(80);
    4     1                   TDTE=DATE;
    5     1                   SUBSTR(DTE,1,2)=SUBSTR(TDTE,3,2);
    6     1                   SUBSTR(DTE,4,2)=SUBSTR(TDTE,5,2);
    7     1                   SUBSTR(DTE,7,2)=SUBSTR(TDTE,1,2);
    8     1                   ON ENDPAGE(SYSPRINT) BEGIN;
   10     2                     PUT FILE(SYSPRINT) PAGE EDIT
                                (DTE,'DOTS SUPPORT UTILITY---SCRR MODEL INTERFACE','PAGE',
                                PAGENO)(A(8),X(10),A,X(17),A(4),F(4));
   11     2                     PUT FILE(SYSPRINT) SKIP(2);
   12     2                     PAGENO=PAGENO+1;
   13     2                     END;
   14     1                   SIGNAL ENDPAGE(SYSPRINT);
   15     1                   CDP='    ';
   16     1                   SIZE=0;
   17     1                   P=ADDR(INREC);
   18     1                   RECORD=' RECORD TYPE=F,LENGTH=(32) ';
```

```
                        /* SCRR MODEL INTERFACE - SECTION II */

STMT LEVEL NEST

 19     1                      SORT=' SORT FIELDS=(9,4,CH,A,1,4,CH,A,5,4,CH,A),SIZE=E500 ';
 20     1                      CALL IHESRTC(SORT,RECORD,20000,RC,E35A);
 21     1                      SORT=' SORT FIELDS=(13,4,CH,A,1,4,CH,A,5,4,CH,A),SIZE=E500 ';
 22     1                      CALL IHESRTC(SORT,RECORD,20000,RC,E35B);
 23     1                      SORT=' SORT FIELDS=(1,4,CH,D,17,8,CH,A,9,4,CH,A),SIZE=E500 ';
 24     1                      CALL IHESRTC(SORT,RECORD,20000,RC,E35C);
 25     1                      PUT FILE(SYSUT1) EDIT
                                 ('NAME','FTCHORVA','ROWS',' N  THRUPUT')
                                 (A(4),X(10),A(8),SKIP,A(4),SKIP,A(11));
 26     1                      DO I=1 BY 1 TO RMAX;
 27     1     1                  PUT FILE(SYSUT1) SKIP EDIT(' L  ',NAME(I))(A(4),A(8));
 28     1     1                  END;
 29     1                      PUT FILE(SYSUT1) SKIP EDIT('COLUMNS')(A(7));
 30     1                      DO I=1 BY 1 TO CMAX;
 31     1     1                  PUT FILE(SYSUT1) SKIP EDIT
                                    (COP(I),'THRUPUT',CAPACITY(I))
                                    (X(4),A(4),X(6),A(7),X(4),F(12,5))';
 32     1     1                  DO K=1 BY 1 TO SIZE(I);
 33     1     2                    PUT FILE(SYSUT1) SKIP EDIT
                                         (COP(I),RNAME(I,K),REQS(I,K))
                                      (X(4),A(4),X(6),A(8),X(3),F(12,5));
 34     1     2                    END;
 35     1     1                  END;
 36     1                      PUT FILE(SYSUT1) SKIP EDIT('RHS')(A(3));
 37     1                      DO I=1 BY 1 TO RMAX;
 38     1     1                  PUT FILE(SYSUT1) SKIP EDIT
                                    ('AVAIL1',NAME(I),AVAIL(I))
                                    (X(4),A(6),X(4),A(8),X(2),F(12,5));
 39     1     1                  END;
 40     1                      PUT FILE(SYSUT1) SKIP EDIT('BOUNDS')(A(6));
 41     1                      DO I=1 BY 1 TO CMAX;
 42     1     1                  PUT FILE(SYSUT1) SKIP EDIT
                                    (PARM,'BUP1',COP(I),MINCON(I))
                                    (X(1),A(2),X(1),A(4),X(6),A(4),X(6),F(12,5));
 43     1     1                  END;
 44     1                      PUT FILE(SYSUT1) SKIP EDIT('ENDATA')(A(6));
 45     1                      CLOSE FILE(SYSUT1);
 46     1                      RETURN;

                               /* E35 EXIT TO BUILT THE RESOURCES VECTOR */
 47     1             E35A:    PROCEDURE(INSTRING);
 48     2                      DECLARE INSTRING CHAR(32);
 49     2                      DSTRING=INSTRING;
 50     2                      IF COL>0 THEN DO; /* TERMINATE THE SORT */
 52     2     1                  CALL IHESARC(8);
 53     2     1                  RETURN;
 54     2     1                  END;
 55     2                      IF TYPE=0 THEN DO;
 57     2     1                  IMAX=IMAX+1;
 58     2     1                  RMAX=IMAX;
 59     2     1                  PUT STRING(NAME(IMAX)) EDIT
                                 ('IG',IMAX,'   ')(A(2),P'999',A(3));
 60     2     1                  END;
 61     2                      ELSE DO;
 62     2     1                  RMAX=RMAX+1;
```

```
                      /* SCRR MODEL INTERFACE - SECTION II */                              PAGE

STMT LEVEL NEST

  63    2    1                 NAME(RMAX)=RMNO;
  64    2    1                 CALL BLNKDOT(NAME(RMAX));
  65    2    1                 END;
  66    2                    AVAIL(RMAX)=REQ;
  67    2                    CALL IHESARC(12); /* CONTINUE THE SORT */
  68    2                    RETURN;
  69    2                    END E35A;

                             /* E35 EXIT TO BUILD THE COURSE REQUIREMENTS VECTOR */
  70    1            E35B:   PROCEDURE(INSTRING);
  71    2                    DECLARE INSTRING CHAR(32);
  72    2                    DSTRING=INSTRING;
  73    2                    IF COL>0 THEN DO;
  75    2    1                 IF COP(CMAX) < CID THEN DO;
  77    2    2                   CMAX=CMAX+1;
  78    2    2                   MINCON(CMAX)=CON;
  79    2    2                   CAPACITY(CMAX)=CAP;
  80    2    2                   COP(CMAX)=CID;
  81    2    2                   END;
  82    2    1                 SIZE(CMAX)=SIZE(CMAX)+1;
  83    2    1                 IF TYPE=3 THEN RNAME(CMAX,SIZE(CMAX))=NAME(ROW);
  85    2    1                 ELSE DO;
  86    2    2                   RNAME(CMAX,SIZE(CMAX))=RMNO;
  87    2    2                   CALL BLNKDOT(RNAME(CMAX,SIZE(CMAX)));
  88    2    2                   END;
  89    2    1                 REJS(CMAX,SIZE(CMAX))=REJ;
  90    2    1                 END;
  91    2                    CALL IHESARC(12);
  92    2                    RETURN;
  93    2                    END E35B;

                             /* E35 EXIT TO PRINT THE INSTRUCTOR VECTOR */
  94    1            E35C:   PROCEDURE(INSTRING);
  95    2                    DECLARE INSTRING CHAR(32);
  96    2                    DSTRING=INSTRING;
  97    2                    IF TYPE=0 THEN DO;
  99    2    1                 CALL IHESARC(8);
 100    2    1                 RETURN;
 101    2    1                 END;
 102    2                    IF COL=0 THEN
 103    2                      PUT FILE(SYSPRINT) SKIP(2) EDIT
                                 ('ROOM ',RMNO,' - ',REQ,' HOURS AVAILABLE.')
                                 (A,A,A,F(7,1),A);
 104    2                    ELSE PUT FILE(SYSPRINT) EDIT
                                 (CID,' - ',REQ)(X(5),A(4),A(3),F(6,1));
 105    2                    CALL IHESARC(12);
 106    2                    RETURN;
 107    2                    END E35C;

 108    1                    END SCRR2;
```

```
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CHART TITLE - PROCEDURE SCRR2 (PARM) OPTIONS (MAIN)



                                       -----------
                                      / 00000001 /
                                      -----------
                                           |
                                           |
                                           |  NOTE   01
                                 * * * * * * * * * * * *
                                 *    SCRR MODEL       *
                                 *    INTERFACE -      *
                                 *    SECTION II       *
                                 * * * * * * * * * * * *
                                           |
                                           |
                                           |

                                         SCRR2
                                           |
                                           |
                                 00000040  |          02
                                     ----------------
                                    /               /
                                   /   OPEN FILE   /
                                  /   (SYSPRINT)  /
                                 /LINESIZE (132) /
                                /               /
                                ----------------
                                           |
                                           |
                                 00000040  |          03
                                     ----------------
                                    /               /
                                   /   OPEN FILE   /
                                  /    (SYSUT1)   /
                                 / LINESIZE (80) /
                                /               /
                                ----------------
                                           |
                                           |
                                 00000041  |          04
                                *---------------------*
                                |    TDTE = DATE      |
                                |                     |
                                | SUBSTR (DTE,1,2)    |
                                |      = SUBSTR       |
                                |     (TDTE,3,2)      |
                                |                     |
                                | SUBSTR (DTE,4,2)    |
                                |      = SUBSTR       |
                                |     (TDTE,5,2)      |
                                *---------------------*
                                           |
                                           |
                                 00000044  |          05
                                *---------------------*
                                | SUBSTR (DTE,7,2)    |
                                |      = SUBSTR       |
                                |     (TDTE,1,2)      |
                                *---------------------*
                                           |
                                           |
                                 00000045  |          06
                                *---------------------*
                                H                 |   |
                                H  (.ON-UNIT01)   |  7|
                                H   ON ENDPAGE    |  .|
                                H   (SYSPRINT)    |  0|
                                H                 |  1|
                                *---------------------*
                                           |
                                 09.01--->|
                                 00000052  |          07
                                *---------------------*
                                |  |                  H
                                |7 |   (.ON-UNIT01)   H
                                |. |  SIGNAL ENDPAGE  H
                                |0 |    (SYSPRINT)    H
                                |1 |                  H
                                *---------------------*
                                           |
                                           |
                                 00000053  |          08
                                *---------------------*
                                |    COP = '    '     |
                                |                     |
                                |      SIZE = 0       |
                                |                     |
                                |  P = ADDR (INREC)   |
                                |                     |
                                | RECORD = ' RECORD   |
                                |       TYPE=F,       |
                                |   LENGTH=(32) '     |
                                *---------------------*
                                           |
                                           |
                                           |
                                           |  /
                                         -----
                                        / 2.02
```

CHART TITLE - PROCEDURE SCRR2 (PARM) OPTIONS (MAIN)

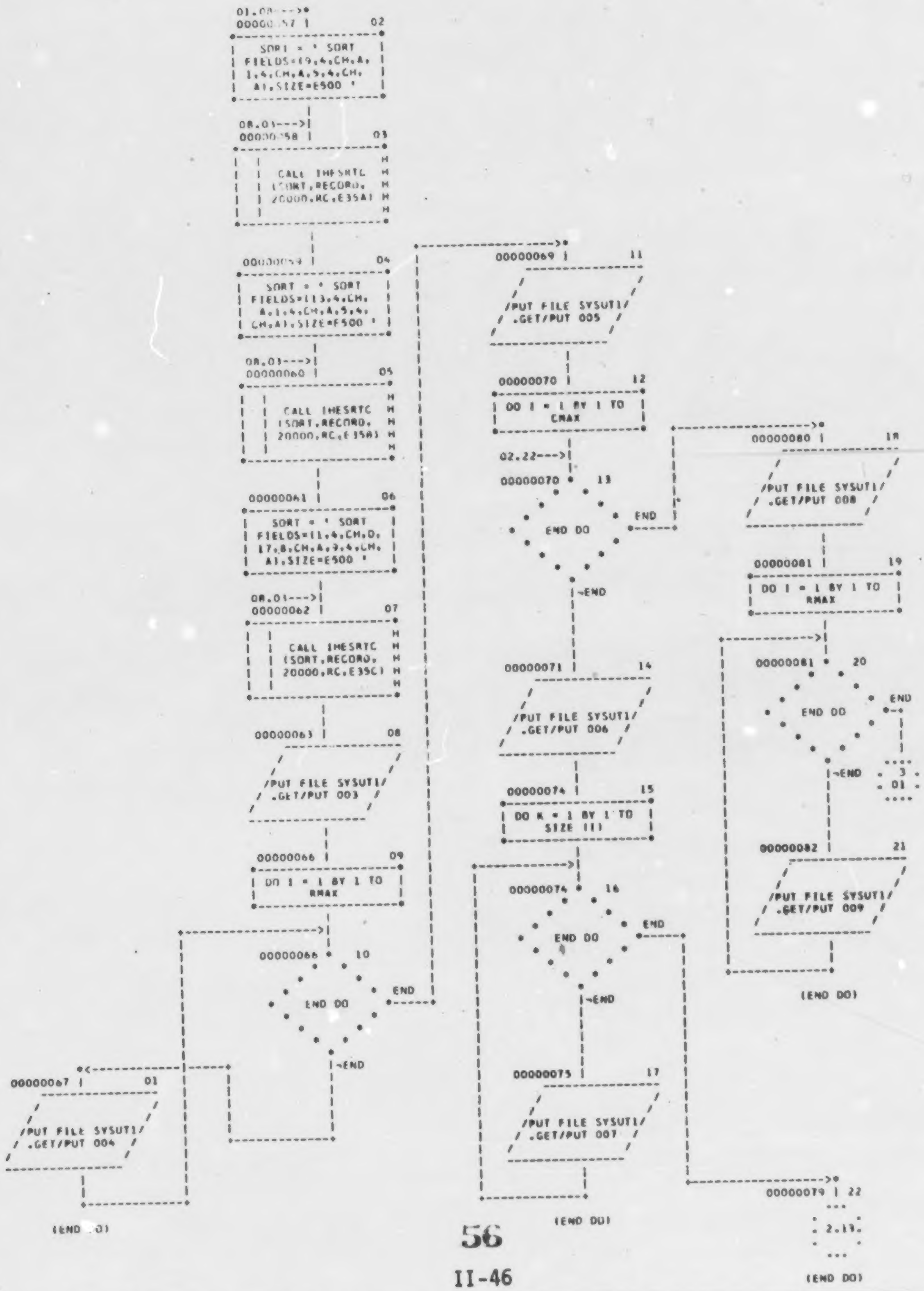
01.08--->
00000057 02
SORT = ' SORT FIELDS=(9,4,CH,A, 1,4,CH,A,5,4,CH, A),SIZE=E500 '
08.03--->
00000058 03
CALL IHESRTC (SORT,RECORD, 20000,RC,E35A)
00000059 04
SORT = ' SORT FIELDS=(13,4,CH, A,1,4,CH,A,5,4, CH,A),SIZE=E500 '
08.03--->
00000060 05
CALL IHESRTC (SORT,RECORD, 20000,RC,E35B)
00000061 06
SORT = ' SORT FIELDS=(1,4,CH,D, 17,8,CH,A,9,4,CH, A),SIZE=E500 '
08.03--->
00000062 07
CALL IHESRTC (SORT,RECORD, 20000,RC,E35C)
00000063 08
/PUT FILE SYSUT1/ .GET/PUT 003
00000066 09
DO I = 1 BY 1 TO RMAX
00000066 10
END DO
END
¬END
00000067 01
/PUT FILE SYSUT1/ .GET/PUT 004
(END DO)
00000069 11
/PUT FILE SYSUT1/ .GET/PUT 005
00000070 12
DO I = 1 BY 1 TO CMAX
02.22--->
00000070 13
END DO
END
¬END
00000071 14
/PUT FILE SYSUT1/ .GET/PUT 006
00000074 15
DO K = 1 BY 1 TO SIZE (I)
00000074 16
END DO
END
¬END
00000075 17
/PUT FILE SYSUT1/ .GET/PUT 007
(END DO)
00000080 18
/PUT FILE SYSUT1/ .GET/PUT 008
00000081 19
DO I = 1 BY 1 TO RMAX
00000081 20
END DO
END
¬END
3
01
00000082 21
/PUT FILE SYSUT1/ .GET/PUT 009
(END DO)
00000079 22
2.13
(END DO)

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CHART TITLE - PROCEDURE SCRR2 (PARM) OPTIONS (MAIN)

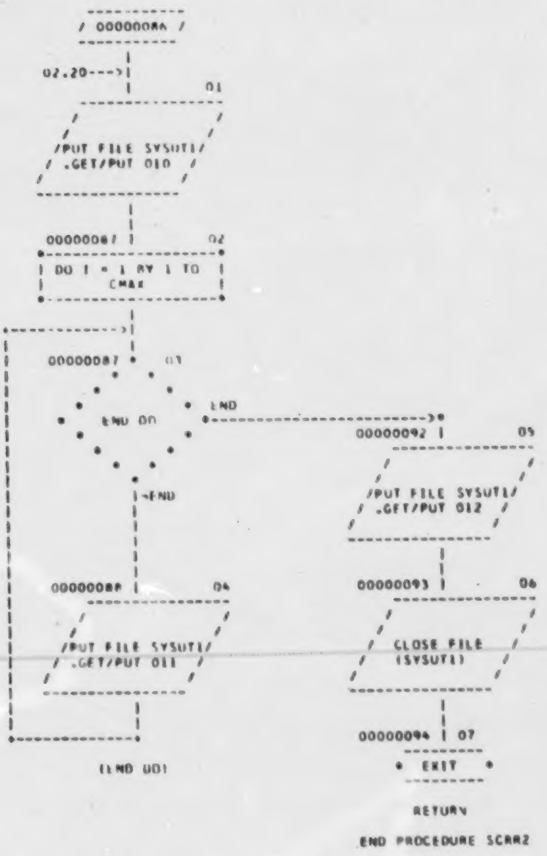
00000086
02.20--->
01
PUT FILE SYSUT1 .GET/PUT 010
00000087
02
DO I = 1 BY 1 TO CMAX
00000087
03
END DO
END
¬END
00000088
04
PUT FILE SYSUT1 .GET/PUT 011
(END DO)
00000092
05
PUT FILE SYSUT1 .GET/PUT 012
00000093
06
CLOSE FILE (SYSUT1)
00000094
07
EXIT
RETURN
END PROCEDURE SCRR2

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CHART TITLE - PROCEDURE E35A (INSTRING)

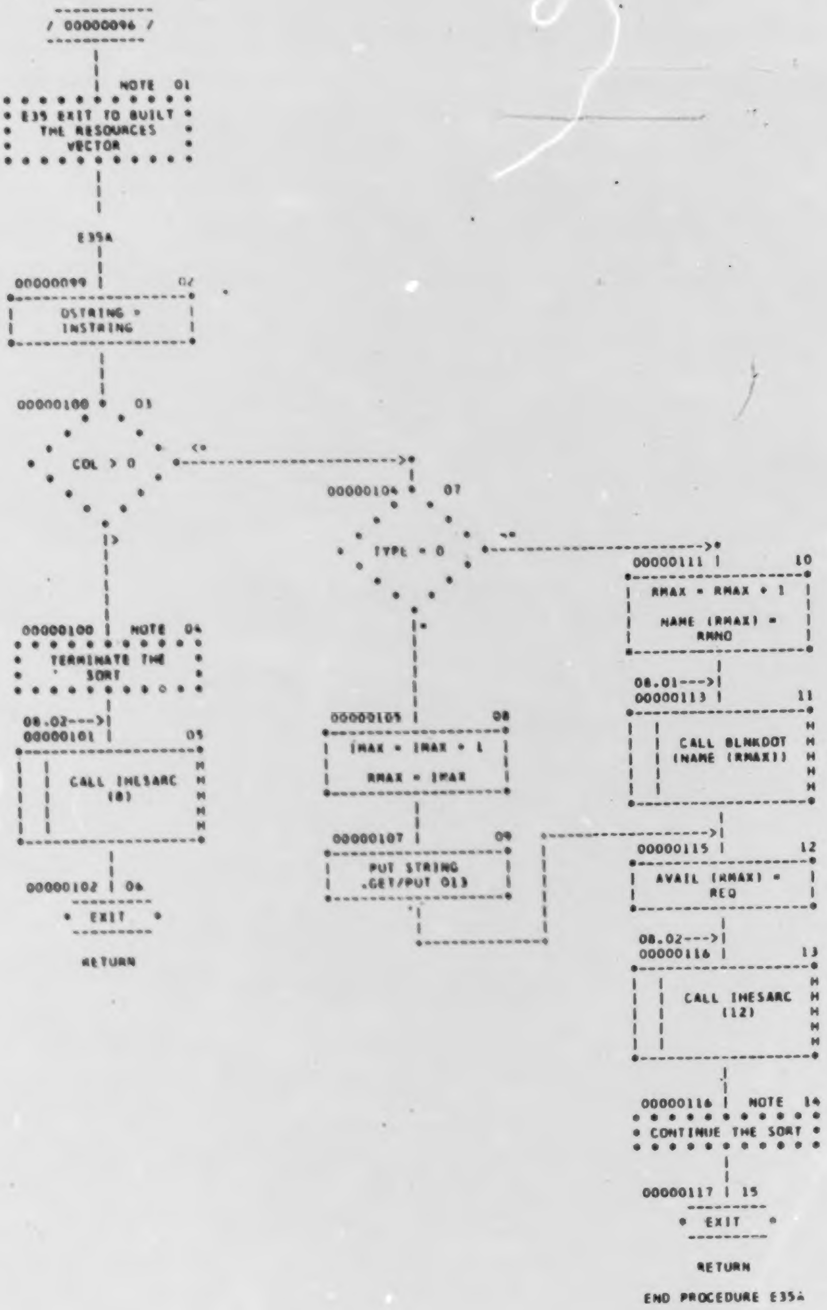

/ 00000096 /
NOTE 01
E35 EXIT TO BUILT THE RESOURCES VECTOR
E35A
00000099 02
DSTRING = INSTRING
00000100 03
COL > 0
<=
00000104 07
TYPE = 0
¬=
00000111 10
RMAX = RMAX + 1
NAME (RMAX) = RMNO
>
=
00000100 NOTE 04
TERMINATE THE SORT
08.02--->
00000101 05
CALL IHESARC (8)
00000102 06
EXIT
RETURN
00000105 08
IMAX = IMAX + 1
RMAX = IMAX
00000107 09
PUT STRING .GET/PUT 013
08.01--->
00000113 11
CALL BLNKDOT (NAME (RMAX))
00000115 12
AVAIL (RMAX) = REQ
08.02--->
00000116 13
CALL IHESARC (12)
00000116 NOTE 14
CONTINUE THE SORT
00000117 15
EXIT
RETURN
END PROCEDURE E35A

CHART TITLE - PROCEDURE E35B (INSTRING)

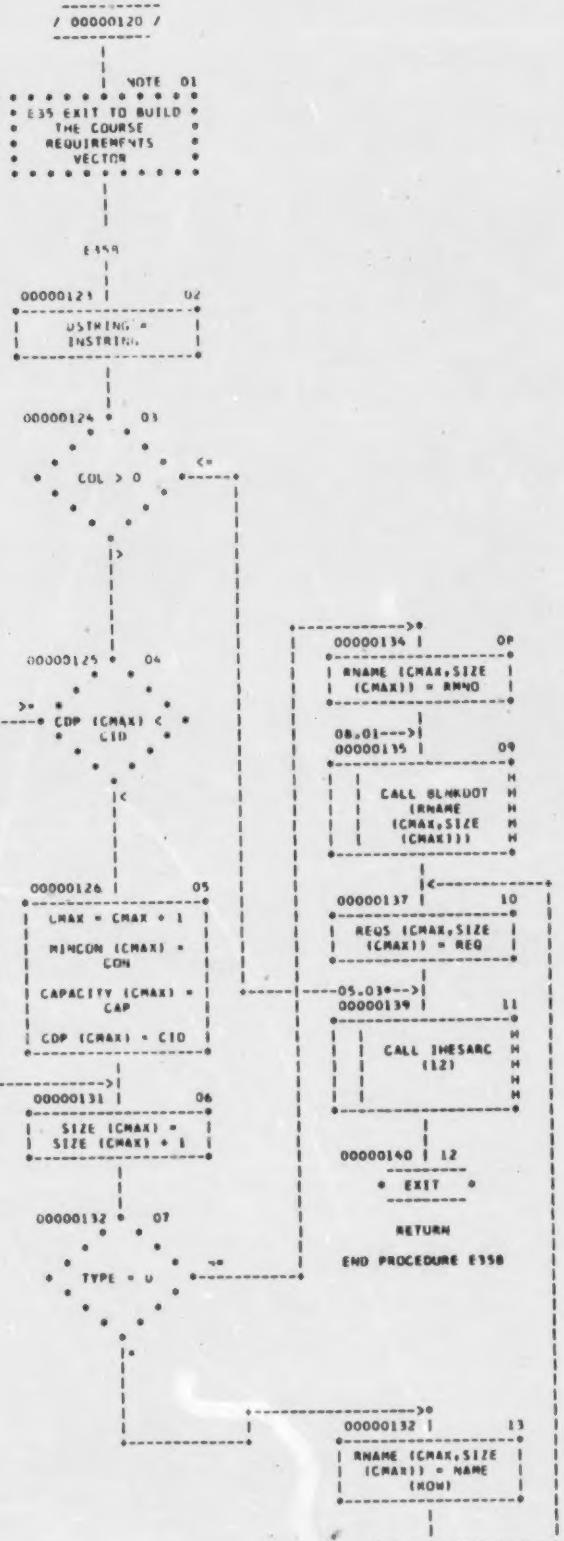
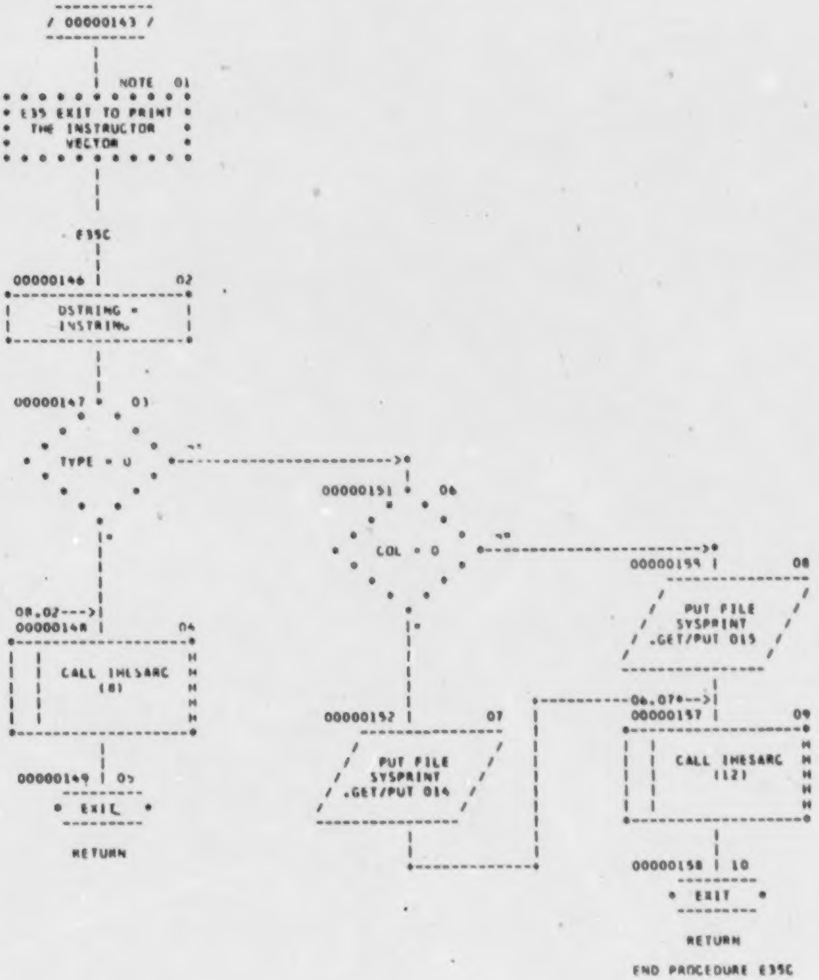

/ 00000120 /
NOTE 01
E35 EXIT TO BUILD THE COURSE REQUIREMENTS VECTOR
E35B
00000123 02
USTRING = INSTRING
00000124 03
COL > 0
<=
>
00000125 04
COP (CMAX) < CID
>=
<
00000126 05
CMAX = CMAX + 1
MINCON (CMAX) = CON
CAPACITY (CMAX) = CAP
COP (CMAX) = CID
00000131 06
SIZE (CMAX) = SIZE (CMAX) + 1
00000132 07
TYPE = U
<=
=
00000134 08
RNAME (CMAX,SIZE (CMAX)) = RMNO
08.01--->
00000135 09
CALL BLNKDOT (RNAME (CMAX,SIZE (CMAX)))
00000137 10
REQS (CMAX,SIZE (CMAX)) = REQ
05.03*-->
00000139 11
CALL IHESARC (12)
00000140 12
EXIT
RETURN
END PROCEDURE E35B
00000132 13
RNAME (CMAX,SIZE (CMAX)) = NAME (ROW)

CHART TITLE - PROCEDURE E35C (INSTRING)


00000143
NOTE 01
E35 EXIT TO PRINT THE INSTRUCTOR VECTOR
E35C
00000146 02
DSTRING = INSTRING
00000147 03
TYPE = U
NO
00000151 06
COL = 0
NO
00000155 08
PUT FILE SYSPRINT .GET/PUT 015
08,02--->
00000148 04
CALL IHESARC (8)
00000149 05
EXIT
RETURN
00000152 07
PUT FILE SYSPRINT .GET/PUT 014
06,07*-->
00000157 09
CALL IHESARC (12)
00000158 10
EXIT
RETURN
END PROCEDURE E35C

```
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 CHART TITLE - ON-UNIT ACTION BLOCKS



                                   -----------
                                  / 00000045 /
                                  -----------

                              01.06*-->*

                             .ON-UNIT01

                                       *
                              00000045 |  NOTE  01
                             * * * * * * * * * * *
                             *    ON ENDPAGE      *
                             *    (SYSPRINT)      *
                             *                    *
                             *       BEGIN        *
                             * * * * * * * * * * *
                                       |
                                       |
                              00000046 |          02
                                 ----------------
                                /               /
                               /   PUT FILE    /
                              /    SYSPRINT   /
                             / .GET/PUT 001  /
                            /               /
                            ----------------
                                       |
                                       |
                              00000049 |          03
                                 ----------------
                                /               /
                               /   PUT FILE    /
                              /    SYSPRINT   /
                             / .GET/PUT 002  /
                            /               /
                            ----------------
                                       |
                                       |
                              00000050 |          04
                            *-------------------*
                            | PAGENO = PAGENO + |
                            |         1         |
                            *-------------------*
                                       |
                                       |
                              00000051 | 05
                                   ---------
                                 *  EXIT   *
                                   ---------

                                END .ON-UNIT01
```

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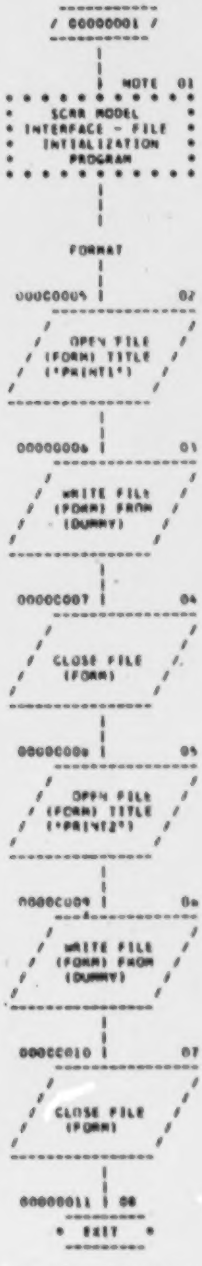
```
        FORMAT:  PROCEDURE OPTIONS(MAIN);                                                          PAGE

STMT LEVEL NEST
  1                  FORMAT:  PROCEDURE OPTIONS(MAIN);
  2      1                    DECLARE FORM FILE RECORD SEQUENTIAL OUTPUT,
                                       DUMMY CHAR(200) STATIC INIT(' ');
  3      1                    OPEN FILE(FORM) TITLE('PRINT1');
  4      1                    WRITE FILE(FORM) FROM(DUMMY);
  5      1                    CLOSE FILE(FORM);
  6      1                    OPEN FILE(FORM) TITLE('PRINT2');
  7      1                    WRITE FILE(FORM) FROM(DUMMY);
  8      1                    CLOSE FILE(FORM);
  9      1                    END FORMAT;
```

CHART TITLE - PROCEDURE FORMAT OPTIONS (MAIN)


00000001
NOTE 01
SCRR MODEL INTERFACE - FILE INITIALIZATION PROGRAM
FORMAT
00000005 02
OPEN FILE (FORM) TITLE ('PRINT1')
00000006 03
WRITE FILE (FORM) FROM (DUMMY)
00000007 04
CLOSE FILE (FORM)
00000008 05
OPEN FILE (FORM) TITLE ('PRINT2')
00000009 06
WRITE FILE (FORM) FROM (DUMMY)
00000010 07
CLOSE FILE (FORM)
00000011 08
EXIT

END PROCEDURE FORMAT

```
        PRINT:    PROCEDURE OPTIONS(MAIN);                                                        PAGE

STMT LEVEL NEST
  1                  PRINT:    PROCEDURE OPTIONS(MAIN);
  2      1                     DECLARE
                                  (PRINT1,PRINT2) FILE RECORD SEQUENTIAL INPUT,
                                  SORTIN FILE RECORD SEQUENTIAL ENV(F(900,90)),
                                  SORTOUT FILE RECORD SEQUENTIAL ENV(F(900,90)),
                                  1 R1 BASED(P),
                                    2 F1 FLOAT DEC(15),
                                    2 F2 FLOAT DEC(15),
                                    2 F3 FLOAT DEC(15),
                                    2 F4 FLOAT DEC(15),
                                    2 F5 FLOAT DEC(15),
                                    2 F6 FLOAT DEC(15),
                                    2 F7 CHAR(8),
                                  1 R2 BASED(P),
                                    2 F1 FLOAT DEC(15),
                                    2 F2 FLOAT DEC(15),
                                    2 F3 FLOAT DEC(15),
                                    2 F4 FLOAT DEC(15),
                                    2 F5 CHAR(8),
                                    2 F6 CHAR(8),
                                    2 F7 CHAR(8),
                                    2 F8 CHAR(8),
                                  1 R3 BASED(P),
                                    2 F1 FLOAT DEC(15),
                                    2 F2 FLOAT DEC(15),
                                    2 F3 FLOAT DEC(15),
                                    2 F4 FLOAT DEC(15),
                                    2 F5 FLOAT DEC(15),
                                    2 F6 FLOAT DEC(15),
                                    2 F7 CHAR(8),
                                    2 F8 CHAR(8),
                                    2 F9 CHAR(8),
                                    2 F10 CHAR(8),
                                  1 OV1 BASED(Q),
                                    2 DAT1 CHAR(56),
                                    2 NM1 CHAR(8),
                                  1 OV2 BASED(Q),
                                    2 DAT2 CHAR(64),
                                    2 NM2 CHAR(8),
                                  1 OV3 BASED(Q),
                                    2 DAT3 CHAR(80),
                                    2 NM3 CHAR(8),
                                  1 SORTREC,
                                    2 NAME CHAR(8),
                                    2 KEY1 CHAR(1),
                                    2 KEY2 CHAR(1),
                                    2 DATA CHAR(80),
                                  INREC CHAR(204) VARYING,
                                  TYPE CHAR(8) BASED(Q),
                                  PAGENO FIXED DEC(3,0) STATIC INIT(1),
                                  T1 FLOAT(15),
                                  CHV(6) CHAR(9),
                                  DATE BUILTIN,
                                  TDTE CHAR(6) STATIC,
                                  DTE CHAR(8) STATIC INIT('  /  /  '),
                                  TOTAL FLOAT DEC(15) STATIC INIT(0),
        PRINT:   PROCEDURE OPTIONS(MAIN);                                              PAGE

STMT LEVEL NEST
                                     DVS CHAR(80) BASED(P),
                                     WRK(10) FLOAT DEC(15),
                                     RANGEFLAG BIT(1) STATIC ALIGNED INIT('0'B),
                                     SRT CHAR(80) VARYING STATIC INIT
                                     (' SORT FIELDS=(9,1,CH,A,1,8,CH,A,10,1,CH,A),SIZE=E500 '),
                                     REC CHAR(80) VARYING STATIC INIT
                                     (' RECORD TYPE=F,LENGTH=(90) '),
                                     NC FIXED BIN(16) STATIC,
                                     THRUPUT FLOAT DEC(15),
                                     DV6 CHAR(8) BASED(U),
                                     (TEST1,TEST2) ENTRY(FLOAT DEC(15)) RETURNS(CHAR(9)),
                                     IHESRTA ENTRY(CHAR(80) VARYING,CHAR(80) VARYING,
                                                     FIXED BIN(16),FIXED BIN(16)) RETURNS(FIXED),
                                     (P,U) POINTER STATIC;
   3     1                        TUTE=DATE;
   4     1                        SUBSTR(DTE,1,2)=SUBSTR(TUTE,3,2);
   5     1                        SUBSTR(DTE,4,2)=SUBSTR(TUTE,5,2);
   6     1                        SUBSTR(DTE,7,2)=SUBSTR(TUTE,1,2);
   7     1                        U=ADDR(INREC); P=ADDR(WRK); C=ADDR(THRUPUT);
  10     1 /                      OPEN FILE(PRINT1),FILE(SORTIN) OUTPUT,
                                     FILE(SYSPRINT) LINESIZE(132);

                                  /* FIRST READ THE 'SOLUTION' ROW SECTION */
  11     1                        KEY1='1'; KEY2='1';
  13     1                        READ FILE(PRINT1) IGNORE(9);
  14     1                        READ FILE(PRINT1) INTO(INREC);
  15     1                        DV6=SUBSTR(INREC,1,8);
  16     1                        READ FILE(PRINT1) INTO(INREC);
  17     1                        DO WHILE(TYPE¬='$ENDSEC$');
  18     1     1                     NAME=NM1;
  19     1     1                     SUBSTR(DATA,1,56)=DAT1;
  20     1     1                     WRITE FILE(SORTIN) FROM(SORTREC);
  21     1     1                     READ FILE(PRINT1) INTO(INREC);
  22     1     1                     END;

                                  /* NEXT READ THE COLUMN SECTION */
  23     1                        KEY1='2';
  24     1                        READ FILE(PRINT1) IGNORE(3);
  25     1                        READ FILE(PRINT1) INTO(INREC);
  26     1                        DO WHILE(TYPE¬='$ENDSEC$');
  27     1     1                     NAME=NM1;
  28     1     1                     SUBSTR(DATA,1,56)=DAT1;
  29     1     1                     WRITE FILE(SORTIN) FROM(SORTREC);
  30     1     1                     READ FILE(PRINT1) INTO(INREC);
  31     1     1                     END;

                                  /* NOW START ON THE 'RANGE' OUTPUT */
  32     1                        KEY1='1'; KEY2='2';
  34     1                        ON UNDEFINEDFILE(PRINT2) GO TO SORT;
  36     1                        ON ENDFILE(PRINT2) GO TO SORT;
  38     1                        OPEN FILE(PRINT2);
  39     1                        READ FILE(PRINT2) IGNORE(9);
  40     1                        READ FILE(PRINT2) INTO(INREC);
  41     1                        DO WHILE(TYPE¬='$ENDSEC$');
  42     1     1                     NAME=NM2;
```

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```
      PRINT:   PROCEDURE OPTIONS(MAIN);                                                    PAGE

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 43     1    1                  SUBSTR(DATA,1,64)=DAT2;
 44     1    1                  WRITE FILE(SORTIN) FROM(SORTREC);
 45     1    1                  READ FILE(PRINT2) INTO(INREC);
 46     1    1                  END;

                             /* THAT WAS SECTION 1 - NOW FOR SECTION 2 */
 47     1                    KEY1='2';
 48     1                    READ FILE(PRINT2) IGNORE(3);
 49     1                    READ FILE(PRINT2) INTO(INREC);
 50     1                    DO WHILE(TYPE¬='$ENDSEC$');
 51     1    1                  NAME=NM3;
 52     1    1                  DATA=DAT3;
 53     1    1                  WRITE FILE(SORTIN) FROM(SORTREC);
 54     1    1                  READ FILE(PRINT2) INTO(INREC);
 55     1    1                  END;

                             /* SECTION 2 DONE - NEXT IS 3 */
 56     1                    KEY1='1'; KEY2='3';
 58     1                    READ FILE(PRINT2) IGNORE(3);
 59     1                    READ FILE(PRINT2) INTO(INREC);
 60     1                    DO WHILE(TYPE¬='$ENDSEC$');
 61     1    1                  NAME=NM2;
 62     1    1                  SUBSTR(DATA,1,64)=DAT2;
 63     1    1                  WRITE FILE(SORTIN) FROM(SORTREC);
 64     1    1                  READ FILE(PRINT2) INTO(INREC);
 65     1    1                  END;

                             /* FINALLY, DO SECTION 4 */
 66     1                    KEY1='2';
 67     1                    READ FILE(PRINT2) IGNORE(3);
 68     1                    READ FILE(PRINT2) INTO(INREC);
 69     1                    DO WHILE(TYPE¬='$ENDSEC$');
 70     1    1                  NAME=NM3;
 71     1    1                  DATA=DAT3;
 72     1    1                  WRITE FILE(SORTIN) FROM(SORTREC);
 73     1    1                  READ FILE(PRINT2) INTO(INREC);
 74     1    1                  END;
 75     1                    RANGEFLAG='1'B;

                             /* ALL DONE CREATING SORT FILE -
                                NOW LETS CLOSE HIM OUT AND CALL SORT */
 76     1           SORT:    CLOSE FILE(SORTIN);
 77     1                    CALL IHESRTA(SRT,REC,25000,RC);
 78     1                    IF RC¬=0 THEN DO;
 80     1    1                  DISPLAY('SORT FAILED');
 81     1    1                  STOP;
 82     1    1                  END;
 83     1                    ON ENDPAGE(SYSPRINT) BEGIN;
 85     2                       PUT FILE(SYSPRINT) PAGE EDIT
                                   (DTE,'S C R R','PAGE ',PAGENO,
                                   'LP OPTIMAL SOLUTION AND SENSITIVITY ANALYSIS',
                                   'RESOURCE DATA','________ ____','RESOURCE',
                                   'THROUGHPUT','ANNUAL','ANNUAL','HOURS',
                                   'PERCENT','UTILIZATION','CHANGE','LIMITING',
                                   'RESOURCE','AVAILABILITY','UTILIZATION',
        PRINT:   PROCEDURE OPTIONS(MAIN);                                                    PAGE

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                                 'UNDER','UTILIZATION',
                                 'RANGE','PER UNIT','VARIABLE','___________','(HOURS)',
                                 '(HOURS)','UTILIZED','MINIMUM','RESOURCE',
                                 'MAXIMUM','CHANGE')
                                 (A,COL(63),A,COL(125),A,F(3),SKIP,COL(45),A,SKIP,
                                 A,SKIP(0),A,SKIP(2),COL(85),A,COL(100),A,SKIP,
                                 X(21),A,X(10),A,X(10),A,X(10),A,X(7),A,X(8),A,
                                 X(8),A,SKIP,X(4),A,X(6),A,X(4),A,X(8),A,X(8),A,X(8),A,
                                 X(10),A,X(7),A,SKIP(0),COL(83),A,SKIP,X(20),A,X(9),A,
                                 X(9),A,X(24),A,X(9),A,SKIP,COL(85),A,X(10),A));
   86     2                   PUT FILE(SYSPRINT) SKIP(3);
   87     2                   PAGENO=PAGENO+1;
   88     2                   END;
   89     1                SIGNAL ENDPAGE(SYSPRINT);
   90     1                OPEN FILE(SORTOUT) INPUT;
   91     1                READ FILE(SORTOUT) INTO(SORTREC);
   92     1                DO WHILE(KEY1='1');
   93     1     1             OVS=DATA;
   94     1     1             T1=100.0*R1.F1/R1.F4;
   95     1     1             PUT FILE(SYSPRINT) SKIP(2) EDIT
                                 (NAME,R1.F4,R1.F1,R1.F2,T1)
                                 (X(4),A(8),F(14),F(16),F(16),F(15));
   96     1     1             IF RANGEFLAG THEN DO;
   98     1     2                READ FILE(SORTOUT) INTO(SORTREC);
   99     1     2                OVS=DATA;
  100     1     2                CHV(1)=TEST2(R2.F1);
  101     1     2                CHV(2)=TEST2(R2.F2);
  102     1     2                CHV(3)=TEST1(R2.F3);
  103     1     2                CHV(4)=TEST1(R2.F4);
  104     1     2                PUT FILE(SYSPRINT) EDIT
                                    (CHV(1),CHV(3),R2.F5,CHV(2),CHV(4),R2.F6)
                                    (COL(84),A(9),X(7),A(9),X(7),A(8),SKIP);
  105     1     2                END;
  106     1     1             READ FILE(SORTOUT) INTO(SORTREC);
  107     1     1             END;

  108     1                 ON ENDPAGE(SYSPRINT) BEGIN;
  110     2                   PUT FILE(SYSPRINT) PAGE EDIT
                                 (DTE,'S C R R','PAGE ',PAGENO,
                                 'LP OPTIMAL SOLUTION AND SENSITIVITY ANALYSIS',
                                 'COURSE DATA',
                                 '______ ____','ANNUAL','THROUGHPUT','COURSE',
                                 'COURSE','MAXIMUM','CURRENT','COURSE','CONVENINGS',
                                 'CHANGE','CAPACITY','LIMITING','CDP NO.','ANNUAL',
                                 'SCHEDULED','NORMAL','RANGE','PER COURSE','RANGE',
                                 'VARIABLE','___________','_________','CONVENINGS',
                                 'CONVENINGS','CAPACITY','MINIMUM','CONVENING',
                                 'MINIMUM','MAXIMUM','CHANGE','MAXIMUM')
                                 (A,COL(63),A,COL(125),A,F(3),SKIP,COL(46),A,SKIP,A,
                                 SKIP(0),A,SKIP(2),COL(70),A,X(8),A,X(4),A,SKIP,X(4),
                                 A,X(10),A,X(10),A,X(9),A,X(8),A,X(8),A,X(9),A,X(8),A,
                                 SKIP,X(4),A,X(10),A,X(9),A,X(8),A,X(10),A,X(9),A,
                                 X(8),A,X(10),A,SKIP(0),COL(60),A,X(23),A,SKIP,
                                 X(19),A,X(6),A,X(7),A,X(9),A,X(9),A,X(0),A,SKIP,
                                 COL(69),A,X(10),A,X(8),A));
```

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```
       PRIVT:   PROCEDURE OPTIONS(MAIN);                                         PAGE

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 111     2                      PUT FILE(SYSPRINT) SKIP(3);
 112     2                      PAGENO=PAGENO+1;
 113     2                      END;
 114     1                   SIGNAL ENDPAGE(SYSPRINT);
 115     1                   ON ENDFILE(SORTOUT) BEGIN;
 117     2                      PUT FILE(SYSPRINT) SKIP(3) EDIT
                                   ('TOTAL CONVERSIONS',TOTAL,'TOTAL THROUGHPUT',THRUPUT)
                                   (A(40),A,COL(22),F(6,1),SKIP);
 118     2                      STOP;
 119     2                      END;
 120     1                   DO WHILE(KEY1<'2');
 121     1     1                OWS=DATA;
 122     1     1                TOTAL=TOTAL+R1.F1;
 123     1     1                PUT FILE(SYSPRINT) SKIP(2) EDIT
                                   (NAME,R1.F1,R1.F3,R1.F2)
                                   (X(4),A(8),F(14,1),F(16),F(16));
 124     1     1                IF RANGEFLAG THEN DO;
 126     1     2                   READ FILE(SORTOUT) INTO(SORTREC);
 127     1     2                   OWS=DATA;
 128     1     2                   CMV(1)=TEST2(R3.F1);
 129     1     2                   CMV(2)=TEST2(R3.F3);
 130     1     2                   CMV(3)=TEST2(R3.F5);
 131     1     2                   CMV(4)=TEST2(R3.F2);
 132     1     2                   CMV(5)=TEST2(R3.F4);
 133     1     2                   CMV(6)=TEST2(R3.F6);
 134     1     2                   PUT FILE(SYSPRINT) EDIT
                                      (CMV(1),CMV(2),CMV(3),R3.F7,
                                       CMV(4),CMV(5),CMV(6),R3.F8)
                                      (COL(40),A(9),A(7),A(9),A(7),A(9),A(9),A(8),SKIP);
 135     1     2                   END;
 136     1     1                READ FILE(SORTOUT) INTO(SORTREC);
 137     1     1                END;

                             /* ROUTINES TO CHECK FOR INFINITE VALUES */
 138     1          TEST1:   PROCEDURE(IN) RETURNS(CHAR(9));
 139     2                   DECLARE
                                IN FLOAT DEC(15),
                                OUT CHAR(9) STATIC;
 140     2                   IF ABS(IN)>99999 THEN DO;
 142     2     1                IF IN<0 THEN SUBSTR(OUT,1,1)='-';
 144     2     1                ELSE SUBSTR(OUT,1,1)=' ';
 145     2     1                SUBSTR(OUT,2,8)='INFINITE';
 146     2     1                END;
 147     2                   ELSE PUT STRING(OUT) EDIT(IN)(F(9,3));
 148     2                   RETURN(OUT);
 149     2                   END TEST1;
 150     1          TEST2:   PROCEDURE(IN) RETURNS(CHAR(9));
 151     2                   DECLARE
                                IN FLOAT DEC(15),
                                OUT CHAR(9) STATIC;
 152     2                   IF ABS(IN)>9999999 THEN DO;
 154     2     1                IF IN<0 THEN SUBSTR(OUT,1,1)='-';
 156     2     1                ELSE SUBSTR(OUT,1,1)=' ';
 157     2     1                SUBSTR(OUT,2,8)='INFINITE';
 158     2     1                END;
```

```
        PRINT:   PROCEDURE OPTIONS(MAIN);                                                        PAGE

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159      2                     ELSE PUT STRING(OUT) EDIT(IN)(F(9,1));
160      2                     RETURN(OUT);
161      2                     END TEST2;

162      1                     END PRINT;
```

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CHART TITLE - PROCEDURE PRINT OPTIONS (MAIN)

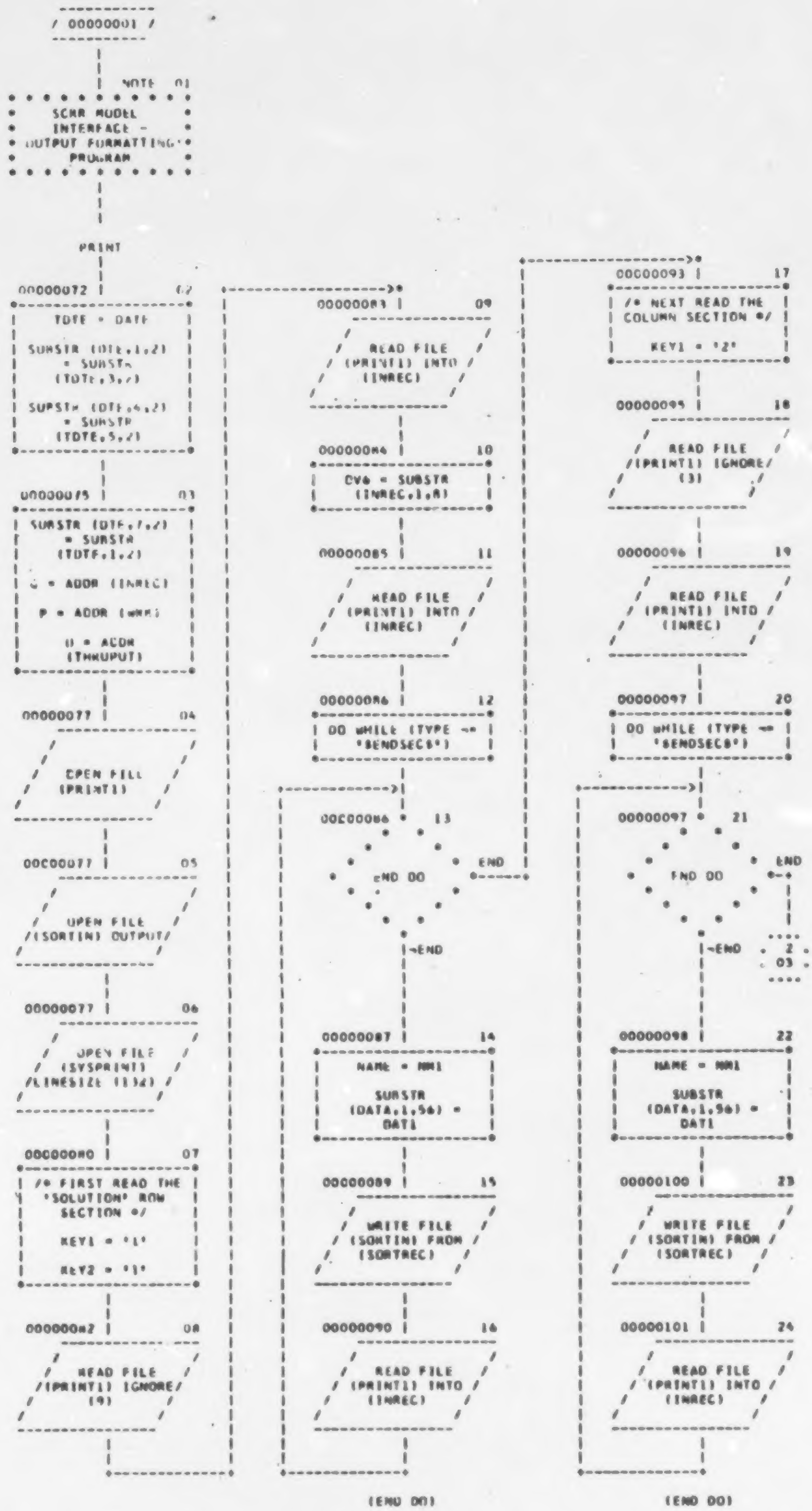

/ 00000001 /
NOTE 01
SCRR MODEL INTERFACE - OUTPUT FORMATTING PROGRAM
PRINT
00000072 02
TDTE = DATE
SUBSTR (DTE,1,2) = SUBSTR (TDTE,3,2)
SUBSTR (DTE,4,2) = SUBSTR (TDTE,5,2)
00000075 03
SUBSTR (DTE,7,2) = SUBSTR (TDTE,1,2)
Q = ADDR (INREC)
P = ADDR (WRK)
U = ADDR (THRUPUT)
00000077 04
OPEN FILE (PRINT1)
00000077 05
OPEN FILE (SORTIN) OUTPUT
00000077 06
OPEN FILE (SYSPRINT) LINESIZE (132)
00000080 07
/* FIRST READ THE 'SOLUTION' ROW SECTION */
KEY1 = '1'
KEY2 = '1'
00000082 08
READ FILE (PRINT1) IGNORE (9)
00000083 09
READ FILE (PRINT1) INTO (INREC)
00000084 10
CV6 = SUBSTR (INREC,1,8)
00000085 11
READ FILE (PRINT1) INTO (INREC)
00000086 12
DO WHILE (TYPE ¬= '$ENDSEC$')
00000086 13
END DO
END
¬END
00000087 14
NAME = NM1
SUBSTR (DATA,1,56) = DAT1
00000089 15
WRITE FILE (SORTIN) FROM (SORTREC)
00000090 16
READ FILE (PRINT1) INTO (INREC)
(END DO)
00000093 17
/* NEXT READ THE COLUMN SECTION */
KEY1 = '2'
00000095 18
READ FILE (PRINT1) IGNORE (3)
00000096 19
READ FILE (PRINT1) INTO (INREC)
00000097 20
DO WHILE (TYPE ¬= '$ENDSEC$')
00000097 21
END DO
END
¬END
2
03
00000098 22
NAME = NM1
SUBSTR (DATA,1,56) = DAT1
00000100 23
WRITE FILE (SORTIN) FROM (SORTREC)
00000101 24
READ FILE (PRINT1) INTO (INREC)
(END DO)

CHART TITLE - PROCEDURE PRINT OPTIONS (MAIN)

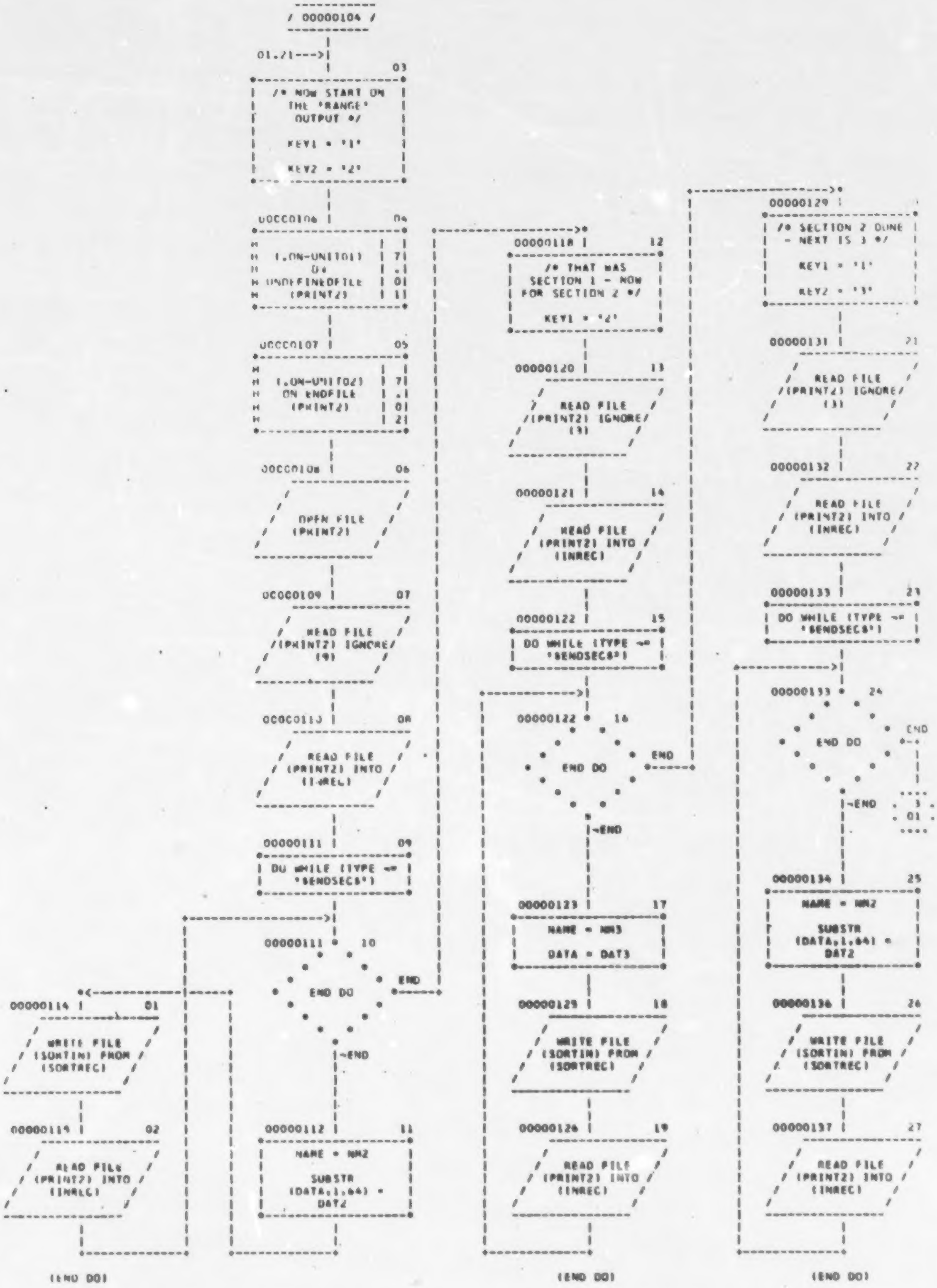
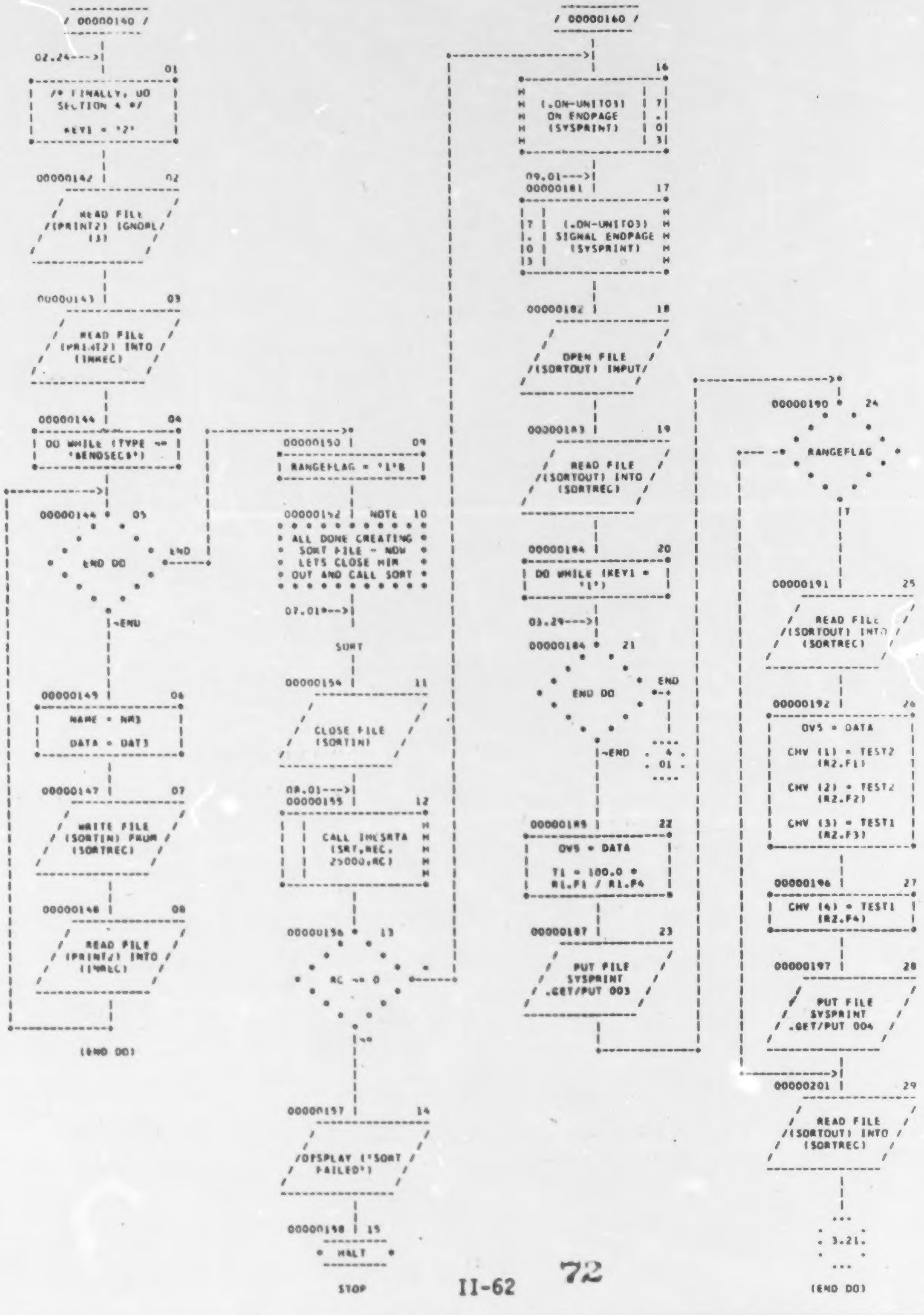

/ 00000104 /
01.21--->
03
/* NOW START ON THE 'RANGE' OUTPUT */
KEY1 = '1'
KEY2 = '2'
00000106 04
(.ON-UNIT01) ON UNDEFINEDFILE (PRINT2)
7 . 0 1
00000107 05
(.ON-UNIT02) ON ENDFILE (PRINT2)
7 . 0 2
00000108 06
OPEN FILE (PRINT2)
00000109 07
READ FILE (PRINT2) IGNORE (9)
00000110 08
READ FILE (PRINT2) INTO (INREC)
00000111 09
DO WHILE (TYPE ¬= '$ENDSEC$')
00000111 10
END DO
END
¬END
00000112 11
NAME = NM2
SUBSTR (DATA,1,64) = DAT2
00000114 01
WRITE FILE (SORTIN) FROM (SORTREC)
00000115 02
READ FILE (PRINT2) INTO (INREC)
(END DO)
00000118 12
/* THAT WAS SECTION 1 - NOW FOR SECTION 2 */
KEY1 = '2'
00000120 13
READ FILE (PRINT2) IGNORE (3)
00000121 14
READ FILE (PRINT2) INTO (INREC)
00000122 15
DO WHILE (TYPE ¬= '$ENDSEC$')
00000122 16
END DO
END
¬END
00000123 17
NAME = NM3
DATA = DAT3
00000125 18
WRITE FILE (SORTIN) FROM (SORTREC)
00000126 19
READ FILE (PRINT2) INTO (INREC)
(END DO)
00000129
/* SECTION 2 DONE - NEXT IS 3 */
KEY1 = '1'
KEY2 = '3'
00000131 21
READ FILE (PRINT2) IGNORE (3)
00000132 22
READ FILE (PRINT2) INTO (INREC)
00000133 23
DO WHILE (TYPE ¬= '$ENDSEC$')
00000133 24
END DO
END
¬END
3 01
00000134 25
NAME = NM2
SUBSTR (DATA,1,64) = DAT2
00000136 26
WRITE FILE (SORTIN) FROM (SORTREC)
00000137 27
READ FILE (PRINT2) INTO (INREC)
(END DO)

CHART TITLE - PROCEDURE PRINT OPTIONS (MAIN)



/ 00000140 /
02.24--->
01
/* FINALLY, DO SECTION 4 */
KEY1 = '2'
00000142 02
READ FILE (PRINT2) IGNORE (3)
00000143 03
READ FILE (PRINT2) INTO (INREC)
00000144 04
DO WHILE (TYPE ¬= '&ENDSEC&')
00000144 05
END DO
END
¬END
00000145 06
NAME = NM3
DATA = DAT3
00000147 07
WRITE FILE (SORTIN) FROM (SORTREC)
00000148 08
READ FILE (PRINT2) INTO (INREC)
(END DO)
00000150 09
RANGEFLAG = '1'B
00000152 NOTE 10
ALL DONE CREATING SORT FILE - NOW LETS CLOSE HIM OUT AND CALL SORT
07.01--->
SORT
00000154 11
CLOSE FILE (SORTIN)
08.01--->
00000155 12
CALL IHESRTA (SRT,REC, 25000,RC)
00000156 13
RC ¬= 0
¬=
00000157 14
DISPLAY ('SORT FAILED')
00000158 15
HALT
STOP
/ 00000160 /
16
(.ON-UNIT03) ON ENDPAGE (SYSPRINT)
7.03
09.01--->
00000181 17
(.ON-UNIT03) SIGNAL ENDPAGE (SYSPRINT)
7.03
00000182 18
OPEN FILE (SORTOUT) INPUT
00000183 19
READ FILE (SORTOUT) INTO (SORTREC)
00000184 20
DO WHILE (KEY1 = '1')
03.29--->
00000184 21
END DO
END
¬END
4.01
00000185 22
OV5 = DATA
T1 = 100.0 * R1.F1 / R1.F4
00000187 23
PUT FILE SYSPRINT .GET/PUT 003
00000190 24
RANGEFLAG
T
00000191 25
READ FILE (SORTOUT) INTO (SORTREC)
00000192 26
OV5 = DATA
CHV (1) = TEST2 (R2.F1)
CHV (2) = TEST2 (R2.F2)
CHV (3) = TEST1 (R2.F3)
00000196 27
CHV (4) = TEST1 (R2.F4)
00000197 28
PUT FILE SYSPRINT .GET/PUT 004
00000201 29
READ FILE (SORTOUT) INTO (SORTREC)
3.21
(END DO)

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CHART TITLE - PROCEDURE PRINT OPTIONS (MAIN)

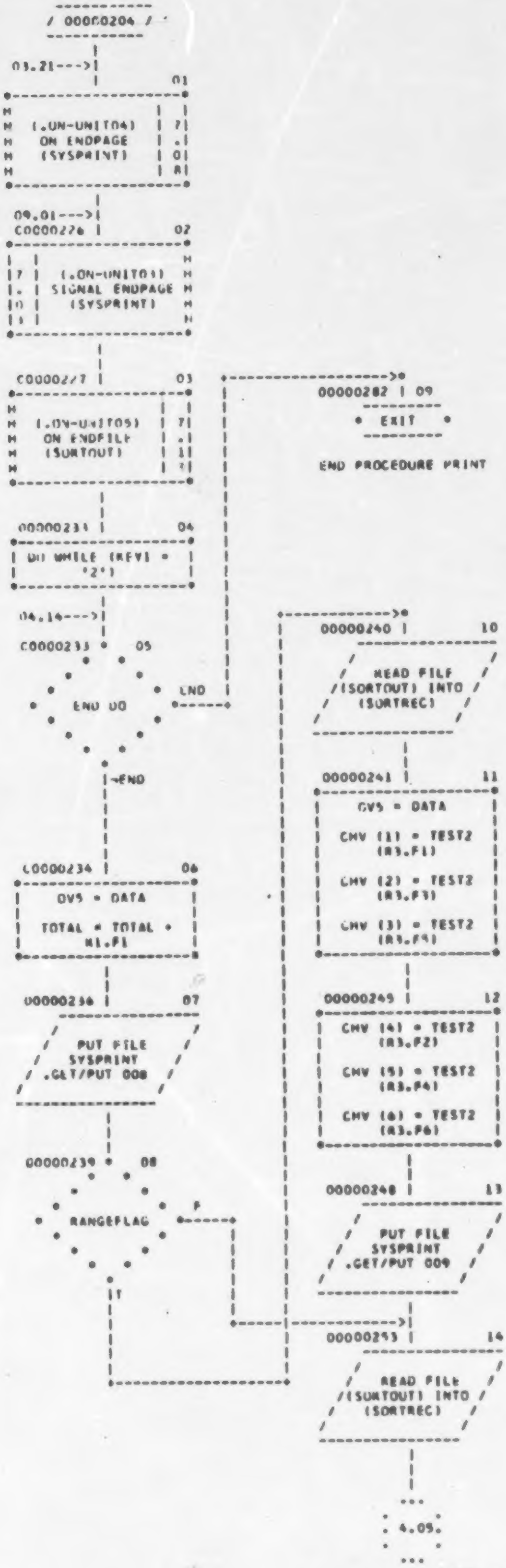

/ 00000204 /
03.21--->
01
(.ON-UNIT04)
ON ENDPAGE
(SYSPRINT)
7.0B
09.01--->
00000226
02
(.ON-UNIT01)
SIGNAL ENDPAGE
(SYSPRINT)
00000227
03
(.ON-UNIT05)
ON ENDFILE
(SORTOUT)
7.11
00000231
04
DO WHILE (KEY1 =
'2')
04.14--->
00000233
05
END DO
END
¬END
00000234
06
OVS = DATA
TOTAL = TOTAL +
R1.F1
00000236
07
PUT FILE
SYSPRINT
.GET/PUT 008
00000239
08
RANGEFLAG
F
T
00000282
09
EXIT
END PROCEDURE PRINT
00000240
10
READ FILE
(SORTOUT) INTO
(SORTREC)
00000241
11
OVS = DATA
CHV (1) = TEST2
(R3.F1)
CHV (2) = TEST2
(R3.F3)
CHV (3) = TEST2
(R3.F5)
00000245
12
CHV (4) = TEST2
(R3.F2)
CHV (5) = TEST2
(R3.F4)
CHV (6) = TEST2
(R3.F6)
00000248
13
PUT FILE
SYSPRINT
.GET/PUT 009
00000253
14
READ FILE
(SORTOUT) INTO
(SORTREC)
4.05

CHART TITLE - PROCEDURE TEST1 (IN) RETURNS (CHAR (9))

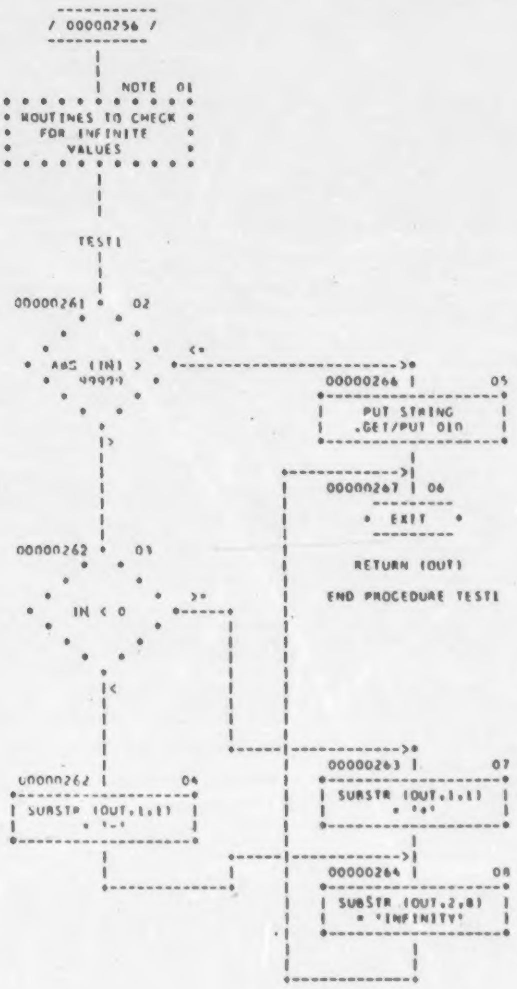

/ 00000256 /
NOTE 01
ROUTINES TO CHECK FOR INFINITE VALUES
TEST1
00000261 02
ABS (IN) > 99999
<=
>
00000266 05
PUT STRING .GET/PUT 010
00000267 06
EXIT
RETURN (OUT)
END PROCEDURE TEST1
00000262 03
IN < 0
>=
<
00000262 04
SUBSTR (OUT,1,1) = '-'
00000263 07
SUBSTR (OUT,1,1) = '+'
00000264 08
SUBSTR (OUT,2,8) = 'INFINITY'

CHART TITLE - PROCEDURE TEST2 (IN) RETURNS (CHAR (9))

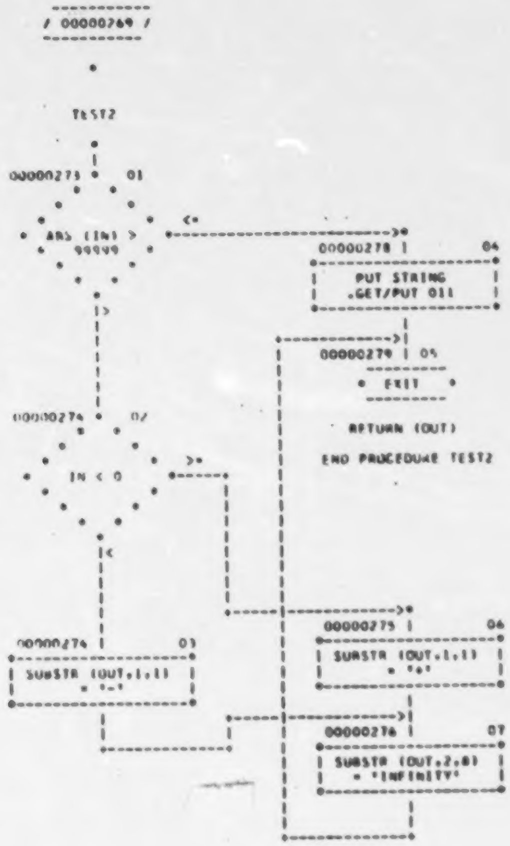
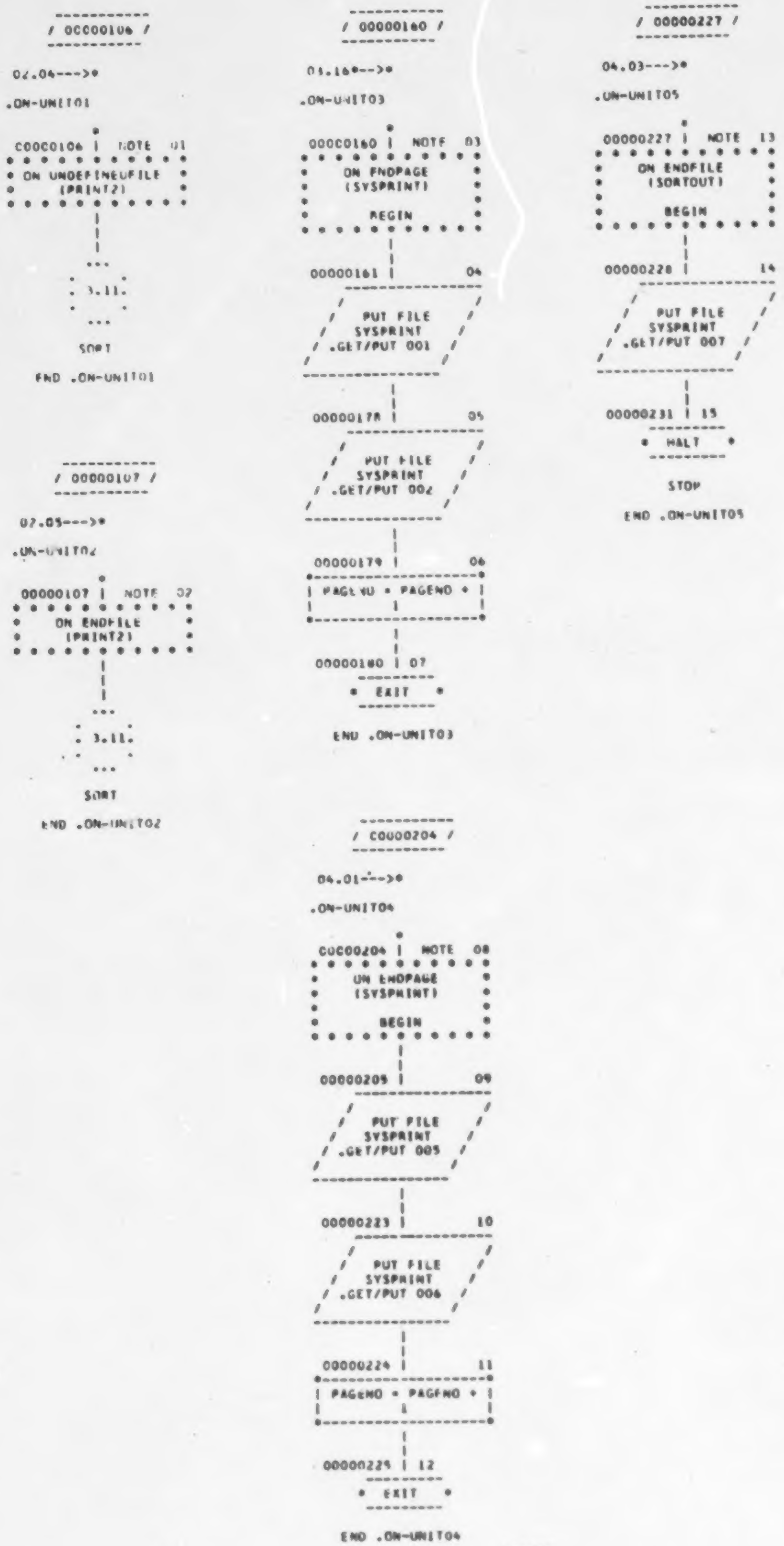

/ 00000269 /
TEST2
00000273
01
ABS (IN) >
99999
<
>
00000278
04
PUT STRING
.GET/PUT 011
00000279
05
EXIT
RETURN (OUT)
END PROCEDURE TEST2
00000274
02
IN < 0
>
<
00000274
03
SUBSTR (OUT,1,1)
= '-'
00000275
06
SUBSTR (OUT,1,1)
= '+'
00000276
07
SUBSTR (OUT,2,8)
= 'INFINITY'

CHART TITLE - ON-UNIT ACTION BLOCKS


/ 00000106 /
02.04--->*
.ON-UNIT01
00000106 | NOTE 01
ON UNDEFINEDFILE (PRINT2)
. 3.11.
SORT
END .ON-UNIT01
/ 00000107 /
02.05--->*
.ON-UNIT02
00000107 | NOTE 02
ON ENDFILE (PRINT2)
. 3.11.
SORT
END .ON-UNIT02
/ 00000160 /
03.16*-->*
.ON-UNIT03
00000160 | NOTE 03
ON ENDPAGE (SYSPRINT)
BEGIN
00000161 | 04
PUT FILE SYSPRINT .GET/PUT 001
00000178 | 05
PUT FILE SYSPRINT .GET/PUT 002
00000179 | 06
PAGENO = PAGENO +
00000180 | 07
EXIT
END .ON-UNIT03
/ 00000204 /
04.01--->*
.ON-UNIT04
00000204 | NOTE 08
ON ENDPAGE (SYSPRINT)
BEGIN
00000205 | 09
PUT FILE SYSPRINT .GET/PUT 005
00000223 | 10
PUT FILE SYSPRINT .GET/PUT 006
00000224 | 11
PAGENO = PAGENO +
00000225 | 12
EXIT
END .ON-UNIT04
/ 00000227 /
04.03--->*
.ON-UNIT05
00000227 | NOTE 13
ON ENDFILE (SORTOUT)
BEGIN
00000228 | 14
PUT FILE SYSPRINT .GET/PUT 007
00000231 | 15
HALT
STOP
END .ON-UNIT05

SECTION III

EDUCATIONAL TECHNOLOGY EVALUATION MODEL

PROGRAM DESCRIPTION

The Educational Technology Evaluation (ETE) model is a single purpose program written in the GPSS V (General Purpose Simulation System) language. At this level of development, all input data are prepared in the source language and included in the source deck. Compilation takes place each time the model is executed (this requires less than one minute on a System/360 Model 40).

The program executes in a 120K byte partition and requires only that the GPSS V compiler (IBM Program Product 5734-XS2) be on the system disk pack. No special disk packs or other data files are required.

The Job Control Language (JCL), which is included in the program listing, is straightforward. Input and output are on the standard system units. A temporary data set is defined for use by the report generator and the compiler.

OPERATING PROCEDURES

After the input data have been prepared according to the procedures in Volume II of this report (Section III, Input Parameters Description), the required input cards are inserted in the source deck, replacing the sample data cards. The program listing has the area for insertion of input data demarcated by comment cards consisting of full rows of asterisks. Comment cards in the program listing include instructions for input data insertion identical to those given here.

When the input data have been included in the source deck (the source deck includes the JCL necessary for GPSS V execution), and any job or sequence cards required by local standards have been affixed to the deck, the model is ready to run. It can then be included directly in the input job stream and all output will appear on the standard system output unit.

MODEL PROGRAM LISTINGS AND FLOW CHARTS

Complete program listings and detailed program flow charts are included in this section.

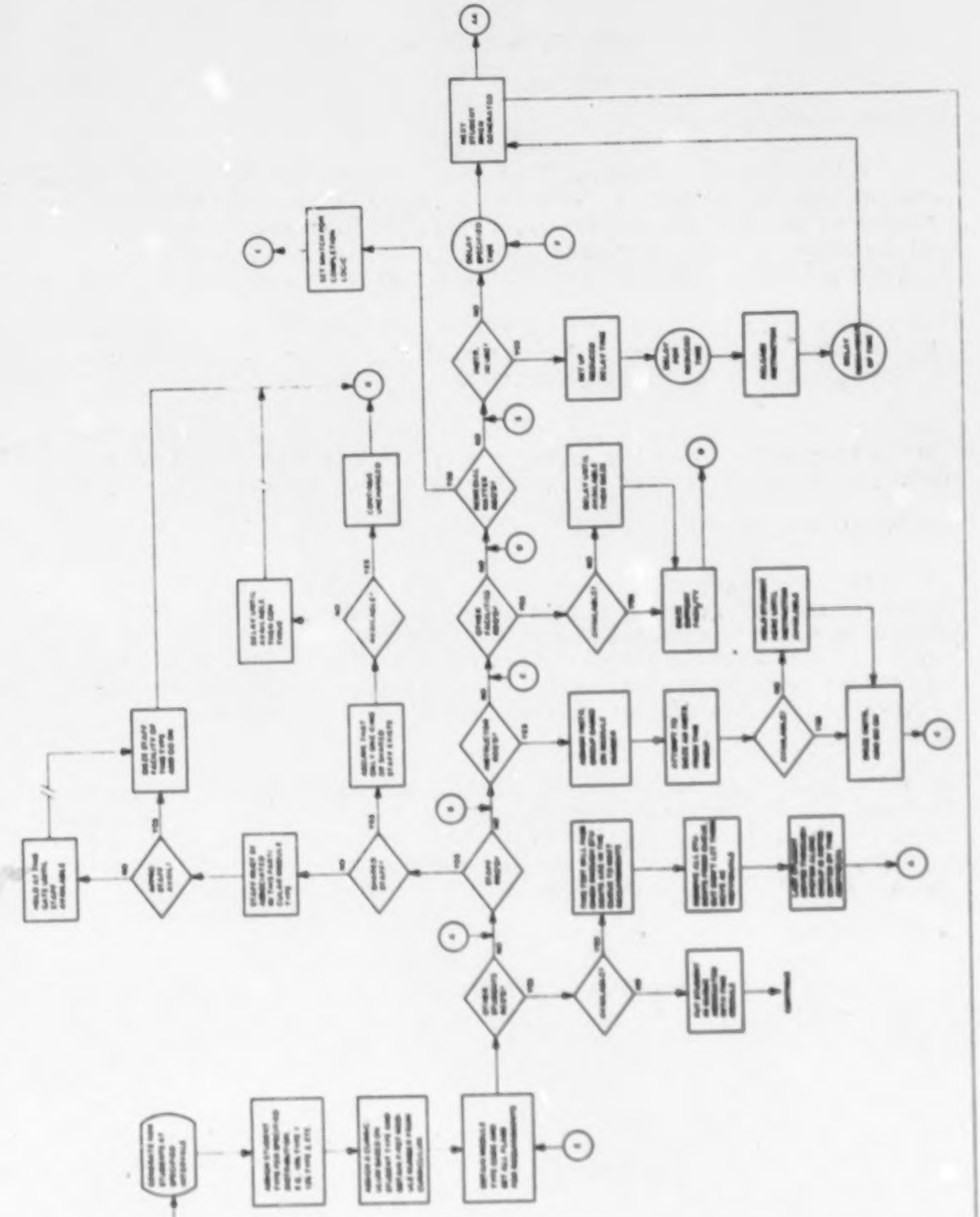


FIGURE III-1 MODULE INSTRUCTION AND EXECUTION LOGIC

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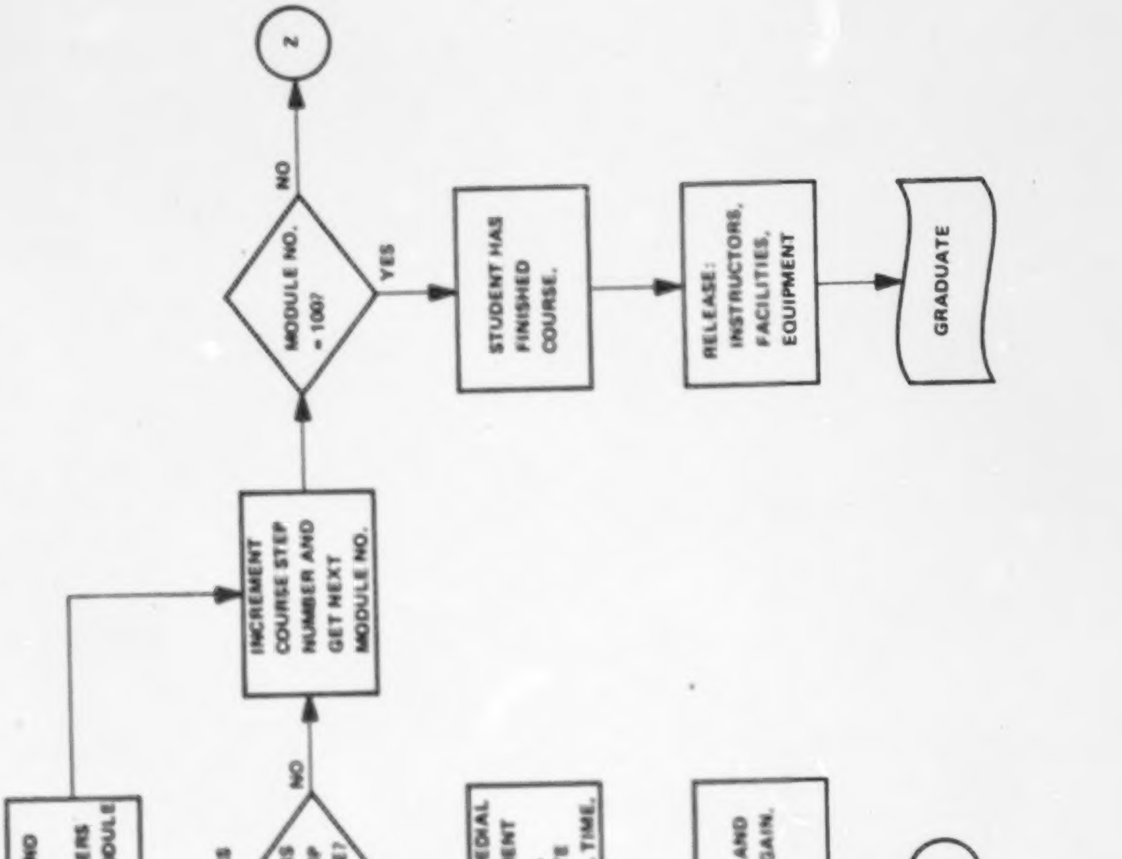
AA
REMEDIAL FLAG ON?
NO
YES
WAS THIS A GROUP MODULE?
YES
NO
OPEN GATE AND FREE OTHER GROUP MEMBERS FOR NEXT MODULE
INCREMENT COURSE STEP NUMBER AND GET NEXT MODULE NO.
MODULE NO. = 100?
NO
YES
Z
STUDENT HAS FINISHED COURSE.
RELEASE: INSTRUCTORS, FACILITIES, EQUIPMENT
GRADUATE
GROUND MODULE?
YES
NO
TURN REMEDIAL REQUIREMENT FLAG OFF. CALCULATE REMEDIAL TIME.
GO BACK AND DELAY AGAIN.
F
TURN REMEDIAL REQUIREMENT FLAG OFF. GET REMEDIAL MODULE TYPE CODE. SET FLAG THAT THIS IS REMEDIAL.
DO NOT ADVANCE STEP COUNTER. GO, PROCESS MODULE.
Z

FIGURE III-2 MODULE COMPLETION LOGIC

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```
************************************************************************************************************************************

//NAVY JOB TIME=600
//EXECS  EXEC    PGM=DAG01V,PARM=B,TIME=600
//DOUTPUT    DD       SYSOUT=A
//DINTERO  DD      UNIT=SYSDA,SPACE=(TRK,(10,10))
//DSYMTAB    DD    UNIT=SYSDA,SPACE=(TRK,(10,10))
//DREPTGEN  DD     UNIT=SYSDA,SPACE=(TRK,(10,10))
//DINTWORK  DD      UNIT=(SYSDA,SEP=(DINTERO)),SPACE=(TRK,(10,10))
//DXREFDS  DD       UNIT=SYSDA,SPACE=(TRK,(1,1))
//DINPUT1  DD   *
IEF236I ALLOC. FOR NAVY      EXECS
IEF237I 130    ALLOCATED TO DOUTPUT
IEF237I 131    ALLOCATED TO DINTERO
IEF237I 132    ALLOCATED TO DSYMTAB
IEF237I 133    ALLOCATED TO DREPTGEN
IEF237I 134    ALLOCATED TO DINTWORK
IEF237I 135    ALLOCATED TO DXREFDS
IEF237I 130    ALLOCATED TO DINPUT1

                                 * * *   G P S S   V  -  O S   V E R S I O N   * * *
                                     *** IBM PROGRAM PRODUCT 5734-XS2 (V1M3) ***
```

```
BLOCK                                                                     STATEMENT
NUMBER  *LOC   OPERATION  A,B,C,D,E,F,G,H,I          COMMENTS              NUMBER
        *  EDUCATIONAL TECHNOLOGY EVALUATION MODEL   LEVEL 1                  1
               SIMULATE                                                       2
         ONE    VARIABLE    FN$TYME/2   THESE ARE USED TO COMPUTE MEAN         3
         TWO    VARIABLE    FN$SPRD/2   AND SPREAD FOR REMEDIAL MODULES        4
         THREE  VARIABLE    X*P2/X*P1   COMPUTE AVG TRANSIT TIME               5
         FOUR   FVARIABLE   (1-FN$INTIM)*FN$TYME                               6
        *  FOUR COMPUTES REDUCED TIME FOR INSTRUCTOR IN USE                    7
         FIVE   FVARIABLE   (1-FN$INTIM)*FN$SPRD                               8
        *  FIVE COMPUTES REDUCED SPREAD FOR INSTRUCTOR IN USE                  9
         SIX    VARIABLE    FN$TYME-P15                                       10
         SEVN   VARIABLE    FN$SPRD-P16                                       11
        ***************************************************************       12
        ***************************************************************       13
        ***************************************************************       14
        ***                                                                   15
        ***               THE FUNCTION CARDS WITHIN                           16
        ***                                                                   17
        ***               THIS AREA ARE SAMPLE DATA                           18
        ***                                                                   19
        ***               ONLY AND SHOULD                                     20
        ***                                                                   21
        ***               BE REPLACED BY THE USER-GENERATED TABLES            22
        ***                                                                   23
        ***               DESCRIBING THE CURRICULA, INSTRUCTORS, AND          24
        ***                                                                   25
        ***               EQUIPMENT, ETC. NECESSARY TO DEFINE THE             26
        ***                                                                   27
        ***               ILS TO BE SIMULATED                                 28
        ***                                                                   29
        ***                                                                   30
         INTIM FUNCTION    RN5,C3                                             31
        0      1.0    .5    1.0    1.0    .5                                  32
        * INTIM ASSIGNS FRACTIONAL TIMES WHEN INSTRUCTOR IN USE               33
         FACT   FUNCTION    P2,L9                                             34
        .1/.0/.9/.0/.0/.0/.0/.0                                               35
        *     FACT RELATES MODULE NUMBER TO FACILITIES NUMBER                 36
         STUDY FUNCTION    RN2,D5                                             37
        .25,1/.4,2/.5,3/.8,4/1.0,5                                            38
         MOUT   FUNCTION    P2,L8                                             39
        1,25/2,20/3,9/4,5/5,3/6,5/7,1/8,0                                     40
        * FUNCTIONS 1-5 RELATE STEP NUMBER TO MODULE NO. IE CURRICULUM        41
        *  THESE FUNCTIONS DEFINE THE ORDER IN WHICH STUDENTS OF DIFFERENT    42
        *  TYPES TAKE AVAILABLE MODULES                                       43
        *  FIVE CURRICULA TYPES ARE DEFINED FOR THIS MODEL LEVEL              44
         1       FUNCTION    P9,L5                                            45
        1,3/2,5/3,6/4,7/5,50                                                  46
         2       FUNCTION    P9,L6                                            47
        1,1/2,2/3,4/4,7/5,8/6,50                                              48
         3       FUNCTION    P9,L4                                            49
        1,3/2,4/3,5/4,50                                                      50
         4       FUNCTION    P9,L7                                            51
        1,1/2,2/3,3/4,5/5,7/6,8/7,50                                          52
         5       FUNCTION    P9,L5                                            53
        1,3/2,4/3,5/4,6/5,50                                                  54
         TYME    FUNCTION    P2,L8                                            55
        1,4/2,1/3,2/4,3/5,1/6,4/7,5/8,2                                       56
```

```
*TPMD   RELATES MODULE NUMBER TO COMPLETION TIME
 SPRD   FUNCTION    P2,L8
1,1/2,0/3,1/4,1/5,0/6,1/7,2/8,0
* SPRD RELATES MODULE NUMBER TO COMPLETION SPREAD
 INSTT FUNCTION     P2,L8
1,6/2,6/3,6/4,14/5,14/6,14/7,22/8,20
* INSTT RELATES MODULE NUMBER TO INSTRUCTOR TYPE
 INSTN FUNCTION     P2,L8
1,2/2,2/3,2/4,2/5,2/6,2/7,2/8,2
* INSTN RELATES NUMBER OF QUALIFIED INSTRUCTORS TO MODULE NUMBER
 MODFL FUNCTION     P2,L8
1,30/2,40/3,50/4,60/5,70/6,80/7,90/8,100
*MODFL RELATES POSITION IN FACILITIES TABLE TO MODULE NUMBER
 MODN   FUNCTION    P2,L8
1,3/2,3/3,3/4,3/5,3/6,3/7,3/8,3
* MODN RELATES NUMBER OF AVAILABLE MODULES TO MODULE NUMBER
 TEAM   FUNCTION    P2,L8
1,3/2,2/3,4/4,5/5,3/6,2/7,5/8,4
* THIS FUNCTION RELATES MODULE NUMBER TO NUMBER OF TEAM MEMBERS
 MODR   FUNCTION    P9,L8
1,3/2,0/3,0/4,0/5,0/6,0/7,0/8,0
*  MODR RELATES REMEDIAL MODULE NUMBER TO MODULE TYPE
 REMM   FUNCTION    P9,L8
1,1/2,2/3,3/4,4/5,5/6,6/7,7/8,8
*  REMM RELATES STEP NUMBER TO REMEDIAL MODULE
        STORAGE     S1,3/S2,5/S3,10/S4,3/S5,4
***
***
************************************************************************
************************************************************************
************************************************************************
 1           GENERATE    2,1,,,,,20    A NEW STUDENT EVERY 2+- 1 HOURS
 2           ASSIGN      9,1                 SET P9 TO INITIAL VALUE OF 1
 3           ASSIGN      1,FN$STUDT          ASSIGN STUDENT TYPE TO P1
 4           ASSIGN      2,FN$1              GET FIRST MODULE NUMBER IN P2
 5           ASSIGN      3,FN$MODT           PUT MODULE TYPE IN P3
 6           ASSIGN      4,P1
 7           ASSIGN      5,25
 8           SAVEVALUE   P9+,1
 9           ASSIGN      4,0
10     AAA   SAVEVALUE   1,P3                MOVE MODULE TYPE TO SAVEVALUE 1
11           SAVEVALUE   2,16                PUT A 16 IN SAVEVALUE 2
12           SAVEVALUE   3,8                 PUT AN 8 IN SAVEVALUE 3
13           SAVEVALUE   4,1
14           SAVEVALUE   4,4
15           SAVEVALUE   5,2
16           TEST GE     X1,X2,BBB           TEST MOD TYPE GE 16
17           ASSIGN      8,1                 YES SET LOGIC SWITCH FOR REMEDIAL
18           SAVEVALUE   1-,X2               REDUCE MODULE DESIGNATOR BY 16
19     BBB   TEST GE     X1,X3,CCC           TEST MODULE TYPE GE 8
20           ASSIGN      7,1           SET FACILITIES REQUIRED SWITCH
21           SAVEVALUE   1-,X3         REDUCE MODULE DESIGNATOR BY 8
22     CCC   TEST GE     X1,X4,DDD     TEST MODULE TYPE GE 4
23           ASSIGN      6,1           SET STAFF REQUIRED SWITCH
24           SAVEVALUE   1-,X4         REDUCE MODULE TYPE BY 4
25     DDD   TEST GE     X1,X5,EEE     TEST GE 2
26           ASSIGN      5,1           SET OTHER STUDENTS REQUIRED
```

```
                                    )
 27           SAVEVALUE  1-,X5        REDUCE MODULE TYPE BY 2                          114
 28     EEE   TEST GE    X1,X6,FIF    TEST GE 1                                        115
 29           ASSIGN     4,1          EQUALS 1-SET INSTRUCTOR REQUIRED                 116
       *                              ALL REQUIRED SWITCHES ARE SET                    117
       *                 SWITCH ASSIGNMENTS ARE AS FOLLOWS                             118
       *                 PARAMETER 1 - STUDENT TYPE                                    119
       *                 PARAMETER 2 - CURRENT MODULE NUMBER (FOR THIS XACT)           120
       *                 PARAMETER 3 - CURRENT MODULE TYPE                             121
       *                 PARAMETER 4-8 - SWITCHES FOR INSTRUCTOR NEEDED ETC            122
       *                 PARAMETER 4 - INSTRUCTOR NEEDED                               123
       *                 PARAMETER 5 - GROUP MODULE                                    124
       *                 PARAMETER 6 - STAFF REQUIRED                                  125
       *                 PARAMETER 7 - FACILITIES REQUIRED                             126
       *                 PARAMETER 8 - REMEDIAL MATTER OUTSIDE MODULE                  127
       *                 PARAMETER 9 - CURRENT MODULE STEP (FOR THIS XACT)             128
       *                 PARAMETER 10 -FLAG THAT SAYS REMEDIATION IS NEEDED            129
       *                 PARAMETER 11 -FLAG THAT DESIGNATES CURRENT MODULE             130
       *                   IS A REMEDIAL MODULE                                        131
 30     FFF   TEST E     X6,P5,GRUP   TEST FOR OTHER STUDENTS REQUIRED                 132
 31           QUEUE      *2           YES THEY ARE-TEST FOR OTHERS                     133
 32           ASSIGN     12,1,TEAM    PUT REQUIRED NO. OF STUDENTS IN P12              134
 33           ASSIGN     10,P2        P10 WILL HAVE P2+8  AS LOGIC SWITCH NO.          135
 34           ASSIGN     10+,8                                                         136
 35           TEST E     Q*10,0,FIX   IF Q*10 IS EMPTY LET FIRST                       137
 36           LOGICR     *10          TEAM MEMBER GO THROUGH                           138
 37     FIX   TEST GE    Q*2,P12,HLD   TEST FOR REQ. NO. IN QUEUE                      139
 38           LOGICS     *2           YES THERE ARE, OPEN GATE FOR OTHERS              140
 39     HLD   GATE LS    *2           HOLD HERE UNTIL TEAM COMPLETE                    141
 40           DEPART     *2           REMOVE FROM TEAM QUEUE                           142
 41           GATE LR    *10,ENDS     DIVERT IF OTHER THAN FIRST MEMBER                143
 42           LOGICS     *10          FIRST MEMBER SETS GATE TO DIVERT                 144
 43           BUFFER                                                                   145
 44     GRUP  TEST E     X6,P11,GRUPE  TEST FOR REMEDIAL MODULE                        146
 45     GROPE ASSIGN     14,140       ASSIGN POSITION OF FIRST REMEDIAL                147
 46           ASSIGN     12,20        MODULE AND NUMBER OF REM MODULES                 148
 47           ASSIGN     17,33        SET LOCATION OF FULL SWITCH                      149
 48     GRUMP TRANSFER   SBR,CCCS,18PH  ATTEMPT TO GET REMEDIAL MODULE                 150
 49           GATE LR    *17          HOLD HERE WHEN NOT AVAILABLE                     151
 50           TRANSFER   ,GROPE       MODULE RELEASED TRY AGAIN                        152
 51           TRANSFER   ,COM1        YOU MAY NOW PROCEED                              153
 52     GRUPE ASSIGN     14,1,MODFL   PUT HIGHEST MOD LOC IN P14                       154
 53           ASSIGN     12,1,MODN    PUTS NUMBER OF AVAILABLE MODULE IN P12           155
 54           ASSIGN     17,34        SET LOCATION OF FULL SWITCH                      156
 55     GRUP1 TRANSFER   SBR,CCCS,18PH  ATTEMPT TO SEIZE MODULE                        157
 56           GATE LR    *17          HOLD HERE WHEN NOT AVAILABLE                     158
 57           TRANSFER   ,GRUPE       MODULE RELEASED - TRY AGAIN                      159
 58     COM1  ASSIGN     13,P14       MOVE MODULE POINTER TO P13                       160
 59           TEST E     X6,P6,MMM    GROUP OR INDIVIDUAL ITS ALL THE SAME             161
 60           TRANSFER   .5,SHR,NSH   STAFF REQUIRED SPLIT ON SHARED OR NOT            162
 61     NSH   ASSIGN     14,120       UN-SHARED STAFF,TRY TO SEIZE                     163
 62           ASSIGN     12,10        PUT NUMBER OF STAFF PEOPLE IN P12                164
 63           ASSIGN     17,35        LOGIC SWITCH 35 FOR THIS FACILITY                165
 64     NSH1  TRANSFER   SBR,CCCS,18PH  TRY TO SEIZE THIS STAFF                        166
 65           GATE LR    *17          HOLD HERE WHEN UNAVAILABLE                       167
 66           TRANSFER   ,NSH         TRY AGAIN                                        168
 67           ASSIGN     20,P14       MOVE SHARED STAFF POINTER TO P20                 169
 68           TRANSFER   ,MMM                                                          170
 69   SHR   GATE LR     43           SHARED STAFF-AVAILABLE IF RESET              171
 70   MMM   TEST E      X6,P4,NINS   TEST FOR INSTRUCTOR REQUIRED                 172
 71   LLL   ASSIGN      14,1,INSTT   PUT HIGHEST INST. FAC LOC IN P14             173
 72         ASSIGN      14+,120      ASSIGN QUEUE NUMBER FOR THIS GROUP           174
 73         QUEUE       *14          QUEUE PRIOR TO TRYING FOR INSTRUCTOR         175
 74         ASSIGN      14-,120      RESET P14 TO CORRECT VALUE                   176
 75         ASSIGN      12,1,INSTN   PUT NUMBER OF INSTRUCTORS IN P12             177
 76         ASSIGN      17,36        LOGIC SWITCH 36 FOR INSTRUCTORS              178
 77   LLLL  TRANSFER    SBR,CCCS,19PH ATTEMPT TO SEIZE INSTRUCTOR                 179
 78         GATE LR     *17          HOLD HERE UNTIL SOMEBODY RELEASES            180
 79         TRANSFER    ,LLL         AN INSTRUCTOR,THEN TRY AGAIN                 181
 80         ASSIGN      19,P14       MOVE INSTRUCTOR POINTER TO P19               182
 81         ASSIGN      14,FN$INSTT   RESTORE QUEUE NO. IN P14                    183
 82         ASSIGN      14+,120      ASSIGN QUEUE NUMBER FOR THIS GROUP           184
 83         DEPART      *14          RELEASE AFTER GETTING INSTRUCTOR             185
 84         ASSIGN      14-,120      RESET P14 TO CORRECT VALUE                   186
 85   NINS  TEST E      X6,P7,NFAC   TEST FOR OTHER FACILITIES                    187
 86         ASSIGN      12,FN$FACT   PUT FACILITY STORAGE NUMBER IN 12            188
 87         QUEUE       *12          QUEUE PRIOR TO ENTERING STORAGE              189
 88         ENTER       *12          OCCUPY OTHER FACILITIES IF POSSIBLE          190
 89         DEPART      *12          LEAVE QUEUE WHEN FINISHED                    191
 90   NFAC  TEST E      X6,P8,DEL    TEST FOR REMEDIATION SELF CONTAINED          192
 91         TRANSFER    .6,REM,DEL   NOT SELF CONTAINED. SPLIT 40 PERCENT         193
 92   REM   ASSIGN      8,2          SET REMEDIAL NEEDED                          194
 93         TRANSFER    ,DEL         GO DELAY                                     195
 94   ENDS  QUEUE       *10                                                       196
 95         TEST E      Q*2,0,STT    TEST FOR ALL REMOVED                         197
 96         LOGICR      *2           CLOSE GATE TO Q*2 EXIT                       198
 97   STT   GATE LR     *10          HOLD HERE FOR REST OF THEM                   199
 98         DEPART      *10                                                       200
 99         TEST F      Q*10,0,NNFC  KEEP SENDING XACTS TO COMPLETION             201
100         LOGICS      *10          UNTIL QUEUE IS EMPTY. THEN CLOSE             202
101         TRANSFER    ,NNFC        GATE.                                        203
102   GRAD  ASSIGN      1+,6         SET POINTER TO SAVEVALUE FOR COUNT           204
103         ASSIGN      2,P1         MOVE LOCATION TO P2                          205
104         ASSIGN      2+,5         SET IT 10-15                                 206
105         ASSIGN      3,P2         MOVE P1 TO P3                                207
106         ASSIGN      3+,5         SET P3 TO 16-20                              208
107         SAVEVALUE   P1+,1        ADD 1 TO GRAD COUNT                          209
108         SAVEVALUE   P2+,M1       ADD TRANSIT TIME TO TOTAL                    210
109         SAVEVALUE   P3,V$THREE   COMPUTE AVG TIME AND PUT IN P3 SAVE          211
110   TRMI  TERMINATE   1                                                         212
111   NRM   ASSIGN      15,FN$TYME   FN 5 HAS MODULE TIME                         213
112         ASSIGN      16,FN$SPRD   FN 6 HAS SPREAD FOR MODULE                   214
113         TRANSFER    ,DELS        GO TO DELAY FOR THIS MODULE                  215
114   DEL   TEST E      X6,P4,NRM     TEST FOR INSTRUCTOR NEEDED                  216
115         ASSIGN      15,V$FOUR    ASSIGN REDUCED COMPLETION TIME               217
116         ASSIGN      16,V$FIVE     AND SPREAD.                                 218
117         ADVANCE     P15,P16      DELAY                                        219
118         RELEASE     *19          LET THE INSTRUCTRO GO                        220
119         ASSIGN      15,V$SIX     SET UP REMAINDER                             221
120         ASSIGN      16,V$SEVN    OF DELAY.                                    222
121         ADVANCE     P15,P16      DELAY REST OF TIME                           223
122         TRANSFER    ,DELP        GO FNISH UP                                  224
123   DELS  ADVANCE     P15,P16      DELAY FOR THIS MODULE                        225
      *   AT THIS POINT THE STUDENT HAS BEEN SET UP TO DO THE MODULE              226
      *   THE COMPLETION LOGIC TAKES CARE OF THING LIKE REMEDIAL                  227
```

```
        *   MODULES,LAST MODULE ETC.
124     DELP  TEST L      X5,P8,ABD   TEST FOR REMEDIAL MODULE NEEDED
125           TEST E      X6,P5,ABM   TEST FOR GROUP EACT
126           ASSIGN      8,0         TURN OFF REMEDIAL FLAG
127           ASSIGN      11,0        TURN OFF FLAG FOR REMEDIAL MODULE
128           ASSIGN      15,V$ONE    AND SPREAD. FUNCTION 3 IS REMEDIAL TIME
129           ASSIGN      16,V$TWO    FN4 IS REMEDIAL SPREAU
130           TRANSFER    ,DELS       YES, GO DELAY FULL TIME
131     ABM   ASSIGN      11,1        SET FLAG THAT THIS IS REMEDIAL MOD.
132           ASSIGN      2,FN$REMN   SET REMEDIAL MODULE NUMBER
133           ASSIGN      3,FN$MOUR   SET REMEDIAL MODULE TYPE
134     NMS1  RELEASE     *13         RELEASE MODULE
135           LOGICR      34
136           LOGICR      35
137           LOGICR      36
138           TEST E      X6,P7,NNF1
139           LEAVE       *12         RELEASE OTHER FACILITIES
140           BUFFER
141     NNF1  ASSIGN      4,0
142           ASSIGN      5,0
143           ASSIGN      6,0
144           ASSIGN      7,0
145           ASSIGN      8,0
146           TRANSFER    ,ZZZ        PROCESS LIKE REGULAR MODULE.
147     ABD   TEST E      X6,P11,AAB  TEST FOR COMPLETION OF REMEDIAL MOD
148           ASSIGN      11,0        YES IT WAS,TURN OFF REMEDIAL FLAG
149           LOGICR      33          SET MODULE AVAILABLE
150     AAB   TEST E      X6,P5,AABB  TEST FOR GROUP EXACT FINISHED
151           LOGICR      *10         OPEN GATE FOR REST OF TEAM
152           BUFFER      LET OTHER TEAM MEMBERS MOVE
153     AABB  TRANSFER    ,REL
154     REL   RELEASE     *13         RELEASE MODULE
155           TEST NE     0,P20,DDD1  TEST FOR UNSHARED STAFF
156           RELEASE     *20         RELEASE STAFF
157           ASSIGN      20,0        TURN OFF FLAG AFTER RELEASING
158     DDD1  LOGICR      34          OPEN GATES FOR MODULE, INSTRUCTOR
159           LOGICR      35          OR STAFF AGAIN
160           LOGICR      36
161           TEST E      X6,P7,NNFC  TEST FOR OTHER FACILITIES
162           LEAVE       *12         RELEASE OTHER FACILITIES
163           BUFFER
164     NNFC  ASSIGN      4,0         ZERO OUT ALL LOGIC SETTINGS
165           ASSIGN      5,0         ZERO OUT ALL LOGIC STTINGS
166           ASSIGN      6,0
167           ASSIGN      7,0
168           ASSIGN      8,0
169           ASSIGN      11,0        ZERO REMEDIAL SWITCH
170           TRANSFER    ,AAC        GO TO NEXT MODULE
171     AAC   ASSIGN      9+,1        STEP P9 TO NEXT COURSE STEP
172           ASSIGN      2,FN*1      PUT NEW MOD NO. IN P2
173           TEST NE     50,P2,GRAD  IF EQ 50 GO TO GRADUATION
174           ASSIGN      3,FN$MODT   ASSIGN NEW MODULE TYPE
175           TRANSFER    ,ZZZ        GO PROCESS NEXT MODULE
        *  THIS IS A SUBROUTINE FOR SEIZING MODULES,INSTRUCTORS OR WHAT EVER
        *       ENTER WITH NUMBER OF ENTITIES TO BE TESTED IN P12
        *                   NUMBER (LOCATION) OF HIGHEST ENTITY IN P14
        *                   LOCATION OF LOGIC SWITCH IN P17
        *       RETURNS WITH SEIZED ENTITY IN P14. IF FACILITY UNAVAILABLE
        *       CLOSES LOGIC GATE AT RETURN POINT
        *       RETURNS TO TRANSFER+1 WHEN BAD,TRANSFER+2 WHEN GOOD
176      CCCS   GATE U      *14,SEZ      CHECK FACILITY IN USE
177             ASSIGN      14-,1        YES IT IS,TRY NEXT
178             LOOP        12,CCCS
179             LOGICS      *17          DIDNT FIND ANY CLOSE GATE
180             TRANSFER    PH,18,1      RETURN TO CALLER
181      SEZ    SEIZE       *14          FACILITY AVAILABLE SEIZE IT
182             TRANSFER    PH,18,3      DIFFERENT RETURN WHEN SUCCESSFUL
                START       400
                REPORT
                EJECT
                SPACE       3
        *                            STUDENT STATISTICS
                SPACE       2
        *       STUDENT TYPE     1      2      3      4      5
                TEXT        NUMBER COMPLETING      #X7,2/XX#     #X8,2/XX#     #X9,2C
        /XX#    #X10,2/XX#     #X11,2/XX#
                TEXT        AVERAGE COMPLETION
                TEXT        TIME                   #X17,2/XX#    #X18,2/XX#    #X1C
        9,2/XX#     #X20,2/XX#     #X21,2/XX#
                SPACE
        *                          INSTRUCTOR STATISTICS
                SPACE       1
        *PERCENT UTILIZATION
                TEXT        INSTRUCTORS:         GROUP 1     GROUP 2     GROUP 3     GC
        ROUP 4     GROUP 5     GROUP 6
                SPACE       1
                TEXT        INSTRUCTOR 1          #F20,2/2RXX.X#        #F14,2/2RXXC
        .X#        #F6,2/2RXX.X#
                TEXT        INSTRUCTOR 2          #F19,2/2RXX.X#        #F13,2/2RXXC
        .X#        #F5,2/2RXX.X#
                TEXT        INSTRUCTOR 3          #F18,2/2RXX.X#        #F12,2/2RXXC
        .X#        #F4,2/2RXX.X#
                SPACE       2
        *TIME WAITING
                TEXT        FOR INSTRUCTOR        #Q126,7/XXXX.X#       #Q134,7/XXXX.C
        X#      #Q140,7/XXXX.X#
                SPACE       1
        *                          MODULE UTILIZATION
                SPACE       1
        *            MODULE NO.       NO. STUDENTS USING    AVG. TIME
                SPACE       1
         2      FORMAT      21-30/F1,F3,F4
         2      FORMAT      31-40/F1,F3,F4
         2      FORMAT      41-50/F1,F3,F4
         2      FORMAT      51-60/F1,F3,F4
         2      FORMAT      61-70/F1,F3,F4
         2      FORMAT      71-80/F1,F3,F4
         2      FORMAT      81-90/F1,F3,F4
         2      FORMAT      91-100/F1,F3,F4
                SPACE
        *                                    OTHER FACILITIES UTILIZATION
                SPACE       1
         12     TEXT        FACILITY NUMBER   PERCENT USAGE        NO. USING       C
         AVG. TIME
        SPACE      1                                                     342
2       FORMAT     1-4/S1,S3,S5,S6                                       343
        SPACE                                                            344
        END                                                              345
```

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SECTION IV

TRAINING PROCESS FLOW MODEL

PROGRAM DESCRIPTION

The Training Process Flow (TPF) model system consists of five programs specifically designed to support data inputs to the TPF model, and one program with six subroutines that comprises the model itself. An outline of the overall TPF system is shown in Figure IV-1.

SUPPORT PROGRAMS. The support programs described in this section consist of three classes of programs: those necessary to reformat data unloaded from the DOTS or scratch data base to the sequential data sets required by the TPF model; those necessary to convert the statistical data into usable failure rates; and those necessary to support temporary data sets for card input. Those support programs that interface directly with the DOTS or scratch data bases are not described in this section, although their use is described under Operational Procedures.

Program UNLOAD1. The TPF model course data reformat program is stored in the program library, TPFMODEL, under the name of UNLOAD1. This program accesses a temporary data set, known as &&UNLOAD, and reformats it into two data sets. The first data set, DATA1, contains all course, schedule, and demand information needed by the TPF model. The second data set, DATA2, contains the 60 character name of the course, the catalog number, and two fields for sort purposes. The format and use of these data sets is described in the Operating Procedures section. Two job steps immediately follow the execution of this program, which sort the data by school and CDP number. As the input data set to this program is a temporary data set, it must be run immediately following, and in conjunction with, a DOTS or scratch data base unload program. Program UNLOAD1 is written in the PL/1 programming language.

Programs FAIL1, FAIL2, and FAIL3. This group of three PL/1 programs accesses the statistical student and course data, and using a third input set of course coefficients, produces pass/fail percentages for the course, based on the mix of students in the course. FAIL1 reads student average data and stores them in a temporary file. The input to FAIL1 is card image so that the user can modify any of the student characteristics to see the effect on failure rate. Program FAIL2 reads the coefficients associated with the particular student characteristics, and stores these data so that the two data sets can be merged. FAIL3 then merges these data sets, and calculates the statistical failure rate predications, based on the student mix and the associated constants produced from off-line regression analysis. These programs produce outputs associated with input and output error checking, and a report, sorted by school, of all school data. This report is quite comprehensive, an example is shown in Figure IV-2. A detailed description of the data elements and the statistical analysis may be found in the Statistical Analysis portion of this section.

Program CARDIN. This is a short utility program that takes course name data cards and stores them in a data set for access by the TPF model during execution. If no name cards are present, this program loads the file with dummy names. This program is written in FORTRAN.

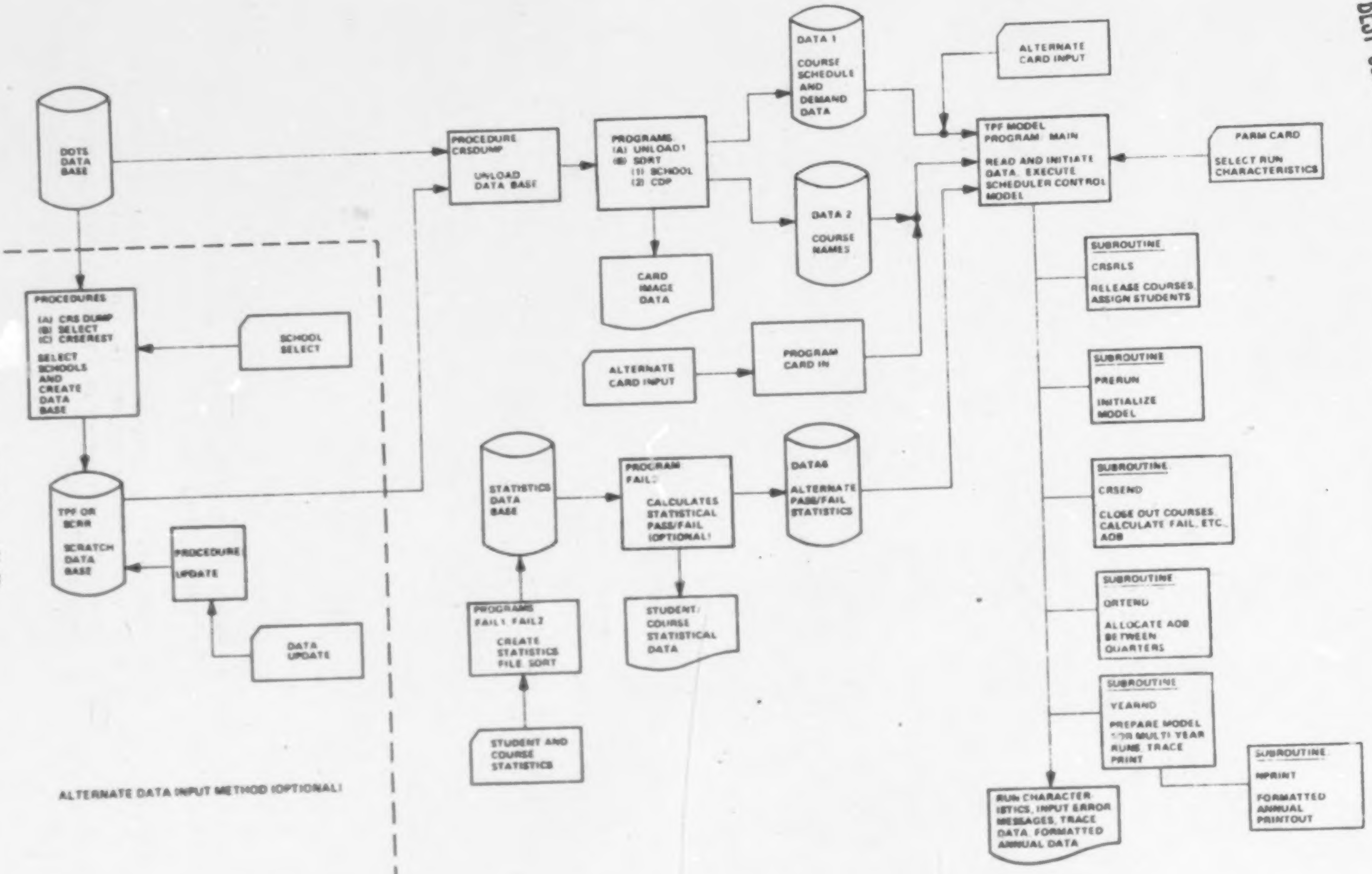
DOTS DATA BASE
PROCEDURE CRSDUMP
UNLOAD DATA BASE
PROGRAMS
(A) UNLOAD1
(B) SORT
(1) SCHOOL
(2) CDP
DATA 1
COURSE SCHEDULE AND DEMAND DATA
DATA 2
COURSE NAMES
CARD IMAGE DATA
ALTERNATE CARD INPUT
PROGRAM CARD IN
ALTERNATE CARD INPUT
TPF MODEL PROGRAM: MAIN
READ AND INITIATE DATA, EXECUTE SCHEDULER CONTROL MODEL
PARM CARD
SELECT RUN CHARACTERISTICS
SUBROUTINE
CRSRLS
RELEASE COURSES, ASSIGN STUDENTS
SUBROUTINE
PRERUN
INITIALIZE MODEL
SUBROUTINE
CRSEND
CLOSE OUT COURSES, CALCULATE FAIL, ETC., AOB
SUBROUTINE
QRTEND
ALLOCATE AOB BETWEEN QUARTERS
SUBROUTINE
YEARND
PREPARE MODEL FOR MULTI YEAR RUNS, TRACE PRINT
SUBROUTINE
NPRINT
FORMATTED ANNUAL PRINTOUT
RUN CHARACTERISTICS, INPUT ERROR MESSAGES, TRACE DATA, FORMATTED ANNUAL DATA
PROCEDURES
(A) CRS DUMP
(B) SELECT
(C) CRSEREST
SELECT SCHOOLS AND CREATE DATA BASE
SCHOOL SELECT
TPF OR SCRR
SCRATCH DATA BASE
PROCEDURE
UPDATE
DATA UPDATE
ALTERNATE DATA INPUT METHOD (OPTIONAL)
STATISTICS DATA BASE
PROGRAMS
FAIL1, FAIL2
CREATE STATISTICS FILE, SORT
STUDENT AND COURSE STATISTICS
PROGRAM
FAIL3
CALCULATES STATISTICAL PASS/FAIL (OPTIONAL)
DATA6
ALTERNATE PASS/FAIL STATISTICS
STUDENT/COURSE STATISTICAL DATA

FIGURE IV-1 TPF PROGRAM SYSTEM DIAGRAM

BEST COPY AVAILABLE

```
R         SCHOOL NAME: AIR CONDITIONING / REFRIGERATION
E         SCHOOL CODE: 8
F
***************************** AVERAGE  x  COEFF  =  TERM ****** AVERAGE  x  COEFF  =  TERM ****** AVERAGE  x  COEFF  =  TERM *****
                                                           *  4552                             *  4582
 1 | |             NUMBER:  4522                            *                                   *   5.0  |  0.000  |  0.000
                                                           *                                   *
 2 | |        DAYS LENGTH:   5.0  |  0.000  |  0.000        *  40.0  |  0.000  |  0.000         *  10     |  0.000  |  0.000
 3 | |           CAPACITY:  16    |  0.000  |  0.000        *  16    |  0.000  |  0.000         *   0     |  0.000  |  0.000
 4 | |       AV OFF INPUT:  10    |  0.000  |  0.000        *   0    |  0.000  |  0.000         *  10     |  0.000  |  0.000
 5 | |       AV ENL INPUT:  16    |  0.000  |  0.000        *  16    |  0.000  |  0.000         *  24     |  0.000  |  0.000
 6 | |   CONVENE PER YEAR:  44    |  0.000  |  0.000        *  25    |  0.000  |  0.000         *
                                                           *                                   *   2     |  0.000  |  0.000
 7 | |      QUOTA CONTROL:   1    |  0.000  |  0.000        *   2    |  0.000  |  0.000         *   2.0   |  0.000  |  0.000
 8 | |  COURSE AGE (YRS):   20.0  |  0.000  |  0.000        *  37.0  |  0.000  |  0.000         *   1     |  0.000  |  0.000
 9 | | MODEL MNGR (CCMM):    0    |  0.000  |  0.000        *   1    |  0.000  |  0.000         *   1     |  0.000  |  0.000
10 | |        COURSE TYPE:   1    |  0.000  |  0.000        *   1    |  0.000  |  0.000         *  24     |  0.000  |  0.000
11 | |           PRIORITY:  16    |  0.000  |  0.000        *  14    |  0.000  |  0.000         *
                                                           *                                   *  50.0   |  0.000  |  0.000
12 | |              % LAB:  75.0  |  0.000  |  0.000        *  40.0  |  0.000  |  0.000         *   7.0   |  0.000  |  0.000
13 | |    CHANGEABILITY:     7.0  |  0.000  |  0.000        *   7.0  |  0.000  |  0.000         *   3     |  0.000  |  0.000
14 | |         GRADE TYPE:   3    |  0.000  |  0.000        *   3    |  0.000  |  0.000         *  75.0   |  0.000  |  0.000
15 |C|         PASS LEVEL:  20.0  |  0.000  |  0.000        *  75.0  |  0.000  |  0.000         *   0     |  0.000  |  0.000
16 |O|          NEC AWARD:   0    |  0.000  |  0.000        *   1    |  0.000  |  0.000         *
   |U|                                                     *                                   *  20.0   |  0.000  |  0.000
17 |R|         % UTILIZED:  89.0  |  0.000  |  0.000        *  94.0  |  0.000  |  0.000         *   0.0   |  0.000  |  0.000
18 |S|         % NO SHOWS:  25.0  |  0.000  |  0.000        *   0.0  |  0.000  |  0.000         *   0.0   |  0.000  |  0.000
19 |E|   BACKLOG (WEEKS):   18.0  |  0.000  |  0.000        *  10.0  |  0.000  |  0.000         *   0.0   |  0.000  |  0.000
20 | |       % SUB QUOTAS:   6.0  |  0.000  |  0.000        *   4.0  |  0.000  |  0.000         *   0.0   |  0.000  |  0.000
21 |D|    % ACAD SETBACKS:   0.0  |  0.000  |  0.000        *  33.0  |  0.000  |  0.000         *
   |A|                                                     *                                   *   0.0   |  0.000  |  0.000
22 |T|   % NONAC SETBACKS:   0.0  |  0.000  |  0.000        *   7.0  |  0.000  |  0.000         *   0.0   |  0.000  |  0.000
23 |A| % NONAC DISENROLL:    0.0  |  0.000  |  0.000        *   2.0  |  0.000  |  0.000         *   0.0   |  0.000  |  0.000
24 | |       AV GCT SCORE:  53.0  |  0.000  |  0.000        *  58.0  | -0.004  | -0.248         *   0.0   |  0.000  |  0.000
25 | |       AV ARI SCORE:  51.0  |  0.000  |  0.000        *  56.0  | -0.008  | -0.450         *   0.0   |  0.000  |  0.000
26 | |      AV MECH SCORE:  53.0  |  0.000  |  0.000        *  56.0  |  0.000  |  0.000         *
                                                           *                                   *   0.0   |  0.000  |  0.000
27 | |      AV CLER SCORE:  50.0  |  0.000  |  0.000        *  51.0  |  0.000  |  0.000         *   0.0   |  0.000  |  0.000
28 | |      AV SHOP SCORE:  55.0  |  0.000  |  0.000        *  57.0  |  0.000  |  0.000         *   0.0   |  0.000  |  0.000
29 | |      AV AFQT SCORE:  59.0  |  0.000  |  0.000        *  71.0  |  0.000  |  0.000         *   0.0   |  0.000  |  0.000
30 | |      AV ETST SCORE:  53.0  |  0.000  |  0.000        *  60.0  |  0.000  |  0.000         *   0.0   |  0.000  |  0.000
31 | |     AV STUDENT AGE:  23.0  |  0.000  |  0.000        *  24.0  |  0.000  |  0.000         *
                                                           *                                   *   6.0   |  0.000  |  0.000
32 | |    AV STUDENT RATE:   4.0  |  0.000  |  0.000        *   5.0  |  0.000  |  0.000         *  30.0   |  0.000  |  0.000
33 | | INSTR ROTATION RATE: 30.0  |  0.000  |  0.000        *  30.0  |  0.000  |  0.000         *   2.0   |  0.000  |  0.000
34 | | AV INSTRS PER CLASS:  2.0  |  0.000  |  0.000        *  [illegible] |  0.000  |  0.000   *   7.0   |  0.000  |  0.000
35 | | INSTR AV PAY GRADE:   7.0  |  0.000  |  0.000        *   7.0  |  0.000  |  0.000         *
*******************************************************************************************************************************
                                                           *                                   *
36 |S|           AV GRADE:  79.0  |  0.000  |  0.000        *  [illegible] |  0.000  |  0.000  *   0.0   |  0.000  |  0.000
37 |T|  AV YRS IN SERVICE:   4.3  |  0.000  |  0.000        *  [illegible] |  0.000  |  0.000  *   0.0   |  0.000  |  0.000
38 |U|    AV YRS IN RATE:    1.2  |  0.000  |  0.000        *  [illegible] |  0.000  |  0.000  *   0.0   |  0.000  |  0.000
39 |D| AV YRS IN PAYGRADE:   0.5  |  0.000  |  0.000        *  [illegible] |  0.000  |  0.000  *   0.0   |  0.000  |  0.000
40 |E|  PRI NEC? (1 = YES):  0.6  |  0.000  |  0.000        *  [illegible] |  0.000  |  0.000  *
   |N|                                                     *                                   *   0.0   |  0.000  |  0.000
41 |T|  AV YRS IN PRI NEC:   0.9  |  0.000  |  0.000        *  [illegible] |  0.000  |  0.000  *   0.0   |  0.000  |  0.000
42 | | AV YRS FORMAL EDUC:  11.6  |  0.000  |  0.000        *  [illegible] |  0.000  |  0.000  *   0.0   |  0.000  |  0.000
43 |D|        DEGREE CODE:   1.6  |  0.000  |  0.000        *  [illegible] |  0.000  |  0.000  *   0.0   |  0.000  |  0.000
44 |A| DUTY TYPE (1 = SHIP): 1.0  |  0.000  |  0.000        *  [illegible] |  0.000  |  0.000  *   0.0   |  0.000  |  0.000
45 |T|     PCS DUTY CODE:    2.0  |  0.000  |  0.000        *  [illegible] |  0.000  |  0.000  *
   |A|                                                     *                                   *   0.0   |  0.000  |  0.000
46 | | AV YRS CURRENT ENL:   1.8  |  0.000  |  0.000        *  [illegible] |  0.000  |  0.000  *   0.0   |  0.000  |  0.000
47 | | AV # PRIOR SCHOOLS:   1.7  |  0.000  |  0.000        *  [illegible] | -0.016  | -0.033  *
*******************************************************************************************************************************
                                                           *                                   *
                                                  0.000    *                         -0.711    *                          0.000
     COLUMN PRODUCT SUM:                                   *                                   *
*******************************************************************************************************************************
                                                           *                                   *
          COEFFICIENT OF                          0.000    *                          0.868    *                          0.000
             ADJUSTMENT:                                   *                                   *
*******************************************************************************************************************************
                                                           *                                   *
   COMPUTED FAILURE RATE:                         0.000    *                          0.137    *                          0.000
                       FOR THIS COURSE, COEFFICIENTS       *                                   *  FOR THIS COURSE, COEFFICIENTS
                            ARE ASSUMED = ZERO             *                                   *       ARE ASSUMED = ZERO
```

FIGURE IV-2 SAMPLE STATISTICAL OUTPUT FOR COURSE FAILURE RATE CALCULATIONS

TPF MODEL PROGRAMS. The TPF model consists of a main routine, and six subroutines, all written in FORTRAN. This model can be run as a stand-alone model, or in conjunction with the previously described support programs.

TPF Program Main. The program MAIN is the heart of the TPF model. All input data is read by this program, and it controls all model cycling. The first step in program MAIN reads the parameter cards and sets the conditions for the run. Defaults and error correction routines ensure a run regardless of the data on this parameter card. This program next reads in all course data from either the unloaded data base or card. Error checking and correction takes place at this time, with output printer messages for run conditions and data errors. Many factors are converted into model usable parameters, such as the conversion of backlog from weeks to students. All totals fields are cleared to allow model execution.

The cycling portion of program runs in years, quarters, and weeks, with a maximum run length of three years. The program will also run an extra quarter prior to the actual model run period to initialize courses that will actually be in session at the model start. This condition can be forced by an INIT input on the parameter run card, and is automatic if there are negative offsets.

The lowest order loop is the weekly cycling loop. This loop checks each week to see if a course should convene. This is accomplished by comparing the course convening frequency with a scheduler matrix to see if the course should be released. This scheduler matrix is first rationalized to take into account schedule offset and schedule change dates. The scheduler matrix only accommodates courses with a convening frequency of 50 or less per year, and courses with a greater frequency are broken into segments, with the total convenings of all segments equal to the parent course. The scheduler matrix takes into account certain non-school periods, such as the Christmas holidays. If the scheduler routine determines that a course should start this week, subroutine CRSRLS is called to set up the necessary convening. A flag is passed to indicate if the model is in a prerun, or initialization mode.

After examining all courses for releasing (or convening) this program then tests if any courses should end. It accomplishes this by testing the release date and length of active courses for convenings that terminate during the week. Subroutine CRSEND is called to close out these courses.

The quarter loop aggregates average on-board data against the quarter in which it occurred for all course sections that are active in more than 1 quarter. This is needed for accurate totals information. It accomplishes this by calling subroutine QTREND.

The year loop calls subroutine YEARND, which prints yearly totals. The MAIN program year loop now clears all totals, and advances the year counter to prepare for multiple year runs.

Subroutine PRERUN. This subroutine is called by subroutine CRSRLS, whenever the model is in an initialization mode, and indicates to CRSRLS if the course should be released. As PRERUN is used only prior to an actual model yearly run, it tests if the course length is such that it will still be in session when the first quarter run of the model begins. Subroutine PRERUN also allocates average on-board figures between the two quarters.

Subroutine CRSRLS. This subroutine is called whenever the scheduler determines that a course should be convened. If the model is in an initialization mode, it first calls PRERUN to verify the course should start. Upon course start, this subroutine first releases BUPERS students, and then students with local quotas. No-shows are calculated, as well as substitute quotas. This routine also calculates student backlog for future convenings.

Subroutine CRSEND. This subroutine is called whenever the scheduler determines a convening should be terminated. Failures and non-academic disenrollments are calculated. The subroutine then determines if other sections of the same course are in session, and if the criteria are such that the possibility exists for setbacks. If a setback possibility exists, CRSEND then searches the run matrix for the other course section, calculates the setbacks, adjusts the utilization figures of the other section, and allocates AOB for the set back students. Finally, this subroutine calculates all accumulated AOB for the course applicable to the quarter in which the section ended. One of two methods is used for calculating AOB, depending on the input AOB constant.

Subroutine QRTEND. This subroutine is called at the end of each quarter, and allocates all AOB figures between quarters for those convenings that are in session in two different quarters. If the method of calculating AOB is such that weekend days are counted in AOB, the weekend days incurred at the quarter end are charged to the quarter in which the course convened.

Subroutine YEARND. This subroutine is used to close out all totals for a fiscal year of model run, and to set the model matrix parameters for further execution. This subroutine also has the ability to print a short form printout of all input data and calculated quarterly totals for courses in the TPF model run. This printout is useful for initial data debug due to its condensed format. If this short form printout is not specified, this subroutine calls NPRINT to produce the standard print format.

Subroutine NPRINT. This subroutine aggregates all quarterly data, by course, calculates percentages such as utilization, no-shows, failures, etc., and prints these data in the output report. These data are accumulated by school, and these totals are also included in a school summary report. Finally, these totals are aggregated against the entire model input data base, in this case the Fleet Training Center, Norfolk, Virginia, and summaries for the entire complex are printed.

OPERATING PROCEDURES

The purpose of this section is to provide the user with the detailed instructions necessary for proper execution of the TPF model. Instructions are given for operation of the entire group of programs that support the TPF system. Further definitions of DOTS data base elements that are unique to the TPF model are also included. These instructions are valid for operation on the IBM System/360 40 as configured at IBM's Cape Kennedy Facility, and should be similar, with minor Job Control Language (JCL) card changes, at similar or larger IBM System/360 or 370 installations. Examples are given for all JCL statements and card inputs necessary for normal operation, with sufficient detail to permit anyone familiar with JCL to modify the system for other configurations.

TPF MODEL SYSTEM. Several programs and cataloged procedures comprise the TPF model system. These programs and procedures, along with those programs necessary to support the DOTS data base, provide the flexibility and utility required for successful model implementation (see Figure IV-1.) All programs directly associated with the TPF model are stored in a 2314 direct access device data set called "TPFMODEL," located on UNIT=NAVY01. All programs and procedures necessary for DOTS data base maintenance and unload consist of cataloged programs and system cataloged procedures. The TPF model itself can run as a stand-alone model with card input, or as an integral part of the TPF system, deriving all inputs from the data base. The following sections will thus be broken into two parts; first, those steps necessary to unload, modify, and reformat the data base for TPF model input, and second, those steps necessary to execute the TPF model, regardless of input method.

TPF MODEL SUPPORT PROGRAMS. The first decision in the execution of the TPF model is whether the input is to be from card or from the DOTS data base. If card input is desired, this section may be skipped. However, if input is desired from either the DOTS data base or a scratch data base, the following steps should be utilized.

Scratch Data Base Creation. Input to the TPF model may come from either the actual DOTS data base, or a scratch data base created specifically for a run. This scratch data base may be the same scratch data base that was created for an SCRR model run. To create this scratch data base; first, unload the DOTS data base (MASTER), then execute procedure 'SELECT', which copies only those schools outlined on the school select card (see Figure II-5). This card allows the copying of any or all schools into the scratch data base. Either the word 'ANY', left justified in field 1, or a missing SELECT card will cause all courses to be copied into the scratch data base. Individual schools may be selected by entering the appropriate school code, left justified, in each of the needed fields. A direct character compare is done so that right justified codes or imbedded blanks will cause a miscompare. No error messages are provided by this procedure. The applicable school codes are:

SCHOOL NAME	SCHOOL CODE
Air Conditioning and Refrigeration	AC&R
Anti-submarine Warfare	ASW
Communications	COMM
Damage Control/Fire Fighting	DC/FF
Electronic Technician	E T
Electrical	ELEC
Instructor Training and Administration	IT/AD
Navigation	NAV
Supply	SUPPLY
Teletype Maintenance	TTM
3-M	3-M

The final step in the creation of the scratch data set is the execution of the program CRSEREST, which creates the scratch data base. The JCL to complete these three steps is contained in Figure IV-3. The only variable term in this JCL is the name of the scratch data base to be created. This term is the right-most name on the card that begins "//STEP3". It is suggested that the name "TPF" be used for data bases created especially for the TPF model, and "SCRR" be used for those created for either SCRR, or combined SCRR and TPF model runs. These data sets will remain on the disk until overwritten by the creation of a new scratch file.

```
//TPFDATA  JOB  MSGLEVEL=(0,1)          *CREATE SCRATCH DATA BASE*
//STEP1   EXEC CRSEDUMP,DB=MASTER       *UNLOAD MASTER DATA BASE*
//STEP2   EXEC SELECT                   *COPY ONLY SELECTED SCHOOLS*
//SELECT.SYSIN DD *                     *SELECT CARD FOLLOWS THIS*

          NOTE - SELECT CARD GOES HERE

//STEP3   EXEC DLIBATCH,PROG=CRSEREST,  *DATA BASE CREATE ROUTINE*
//             PSB=CRSELOAD,DB=TPF      *SCRATCH DATA BASE NAME-TPF*
//GO.UNLOAD DD DSN=&&DDSET,DISP=(OLD,DELETE)
/*
```

FIGURE IV-3 JCL TO CREATE SCRATCH DATA BASE

At this point in the procedure, the user will most likely update this scratch data base, as otherwise its creation was unnecessary. The data base update procedure is covered fully in Volume III, Section V, and is not repeated here. The only precaution to be exercised is that the scratch data base name be specified so that the contents of the "MASTER" DOTS data base are not inadvertently destroyed.

Data Base Unload and Format. The DOTS data base contains course, schedule, and demand data for all courses taught at Fleet Training Center, Norfolk, Va. as well as historical pass/fail, no-show, and non-academic dropout rates for the individual courses. These data base elements or the data unloaded and modified in the scratch data base in the previous section, can now be formatted and sorted for direct entry for the TPF model. No data inputs, other than the job JCL are required to perform this function. The JCL to perform this unload and sort is shown in Figure IV-4.

The only user variable in this JCL is the data base to be unloaded. The first active JCL card (STEP0) contains the data base parameter. Use DB=TPF to unload the TPF scratch data base, DB=SCRR to unload the SCRR scratch data base, or DB=MASTER to unload the DOTS data base.

All course data elements except the course name are loaded into DATA1, while the course names are loaded into DATA2. Both files are then sorted, with school code as the primary sort, and CDP number as the secondary sort. The exact format of each of these files is described fully in the section describing card input to the TPF model. The information in DATA1 and DATA2 will remain until the next execution of this procedure.

Unload Statistics File and Calculate Failures. The next step is to unload the statistics file and calculate the new failure rates for each of the courses. The statistics file contains the average student data for 28 student characteristics. It also contains multiplication constants used for these variables as obtained from multiple regression analysis. The program STATCAL analyzes these statistics, and makes available to the TPF model revised pass/fail percentages based on the average inputs to the class. It is beyond the scope of this

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discussion to describe the methodology used to create these data; a detailed analysis of the data elements and their meaning may be found in the statistical portion of this section. In general, this set of programs merges course average data with average student data to create a file of the average values of each of 28 characteristics. The user then enters coefficients obtained from the statistical analysis, and program FAIL3 then calculates the failure rates for each course. A detailed outline of this flow is shown in Figure IV-5, and the formats for the three input cards are shown in Figure IV-6. The JCL to unload this file, calculate pass/fail characteristics, and to provide a detailed printout of these characteristics, is shown in Figure IV-7. The printout format was illustrated in Figure IV-2.

```
//* INSERT JOB CARD IF RUN AS A SEPARATE JOB
//STEP0    EXEC CRSEDUMP,DB=TPF
//*  USE DB=TPF FOR SCRATCH DATA BASE, DB=MASTER FOR DOT BASE
//*  DATA BASE OUTPUT IN TEMP DATA SET &&UNLOAD
//STEP1    EXEC PGM=UNLOAD1
//STEPLIB   DD  DSN=TPFMODEL,DISP=SHR
//SYSPRINT DD  SYSOUT=A
//UNLOAD    DD  DSN=&&UNLOAD,DISP=(OLD,DELETE)
//SYSUT2    DD  DSN=&&LOADUN,UNIT=2314, *COURSE DATA CARDS*
//              DCB=(RECFM=FB,LRECL=80,BLKSIZE=800),
//              SPACE=(800,(20,10)),DISP=(NEW,PASS)
//SYSUT3    DD  DSN=&&DUMPIT,UNIT=2314, *NAME DATA CARDS*
//              DCB=(RECFM=FB,LRECL=80,BLKSIZE=800),
//              SPACE=(800,(20.10)),DISP=(NEW,PASS)
//STEP2    EXEC PROC=SORTD,               *SORT BY SCHOOL, CDP*
//              PARM.SORT='MSG=AP'
//SORT.SORTIN DD DSN=&&LOADUN,DISP=(OLD,DELETE)
//SORT.SORTOUT DD DSN=DATA1,UNIT=2314,VOL=SER=NAVY01,DISP=(OLD,KEEP)
//SORT.SORTWK01 DD SPACE=(CYL,5,,CONTIG),UNIT=SYSDA
//SORT.SORTWK02 DD SPACE=(CYL,5,,CONTIG),UNIT=SYSDA
//SORT.SORTWK03 DD SPACE=(CYL,5,,CONTIG),UNIT=SYSDA
//SORT.SYSIN DD *
    SORTFIELDS=(5,6,CH,A,1,4,CH,A),SIZE=E200
    END
//STEP3    EXEC PROC=SORTD,PARM.SORT='MSG=AP'
//SORT.SORTIN DD DSN=&&DUMPIT,DISP=(OLD,DELETE)
//SORT.SORTOUT DD DSN=DATA2,UNIT=2314,VOL=SER=NAVY01,DISP=(OLD,KEEP)
//SORT.SORTWK01 DD SPACE=(CYL,5,,CONTIG),UNIT=SYSDA
//SORT.SORTWK02 DD SPACE=(CYL,5,,CONTIG),UNIT=SYSDA
//SORT.SORTWK03 DD SPACE=(CYL,5,,CONTIG),UNIT=SYSDA
//SORT.SYSIN DD *
    SORT FIELDS=(5,6,CH,A,1,4,CH,A),SIZE=E200
    END
/*
```

FIGURE IV-4 JCL TO UNLOAD AND FORMAT DATA BASE TO TPF MODEL

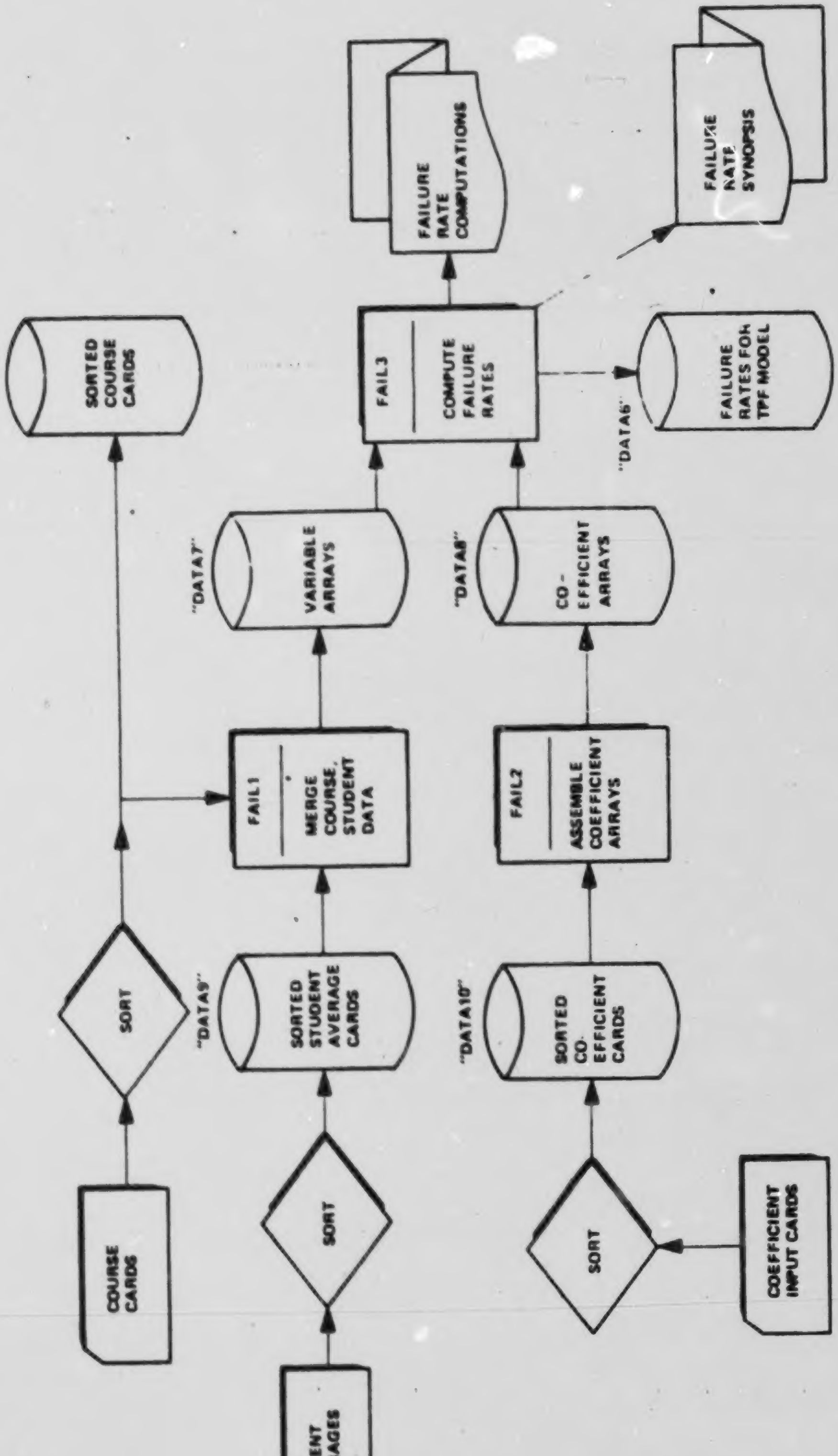

COURSE CARDS
SORT
"DATA5"
SORTED COURSE CARDS
STUDENT AVERAGES
SORT
"DATA9"
SORTED STUDENT AVERAGE CARDS
FAIL1
MERGE COURSE, STUDENT DATA
"DATA7"
VARIABLE ARRAYS
COEFFICIENT INPUT CARDS
SORT
"DATA10"
SORTED CO. EFFICIENT CARDS
FAIL2
ASSEMBLE COEFFICIENT ARRAYS
"DATA8"
CO-EFFICIENT ARRAYS
FAIL3
COMPUTE FAILURE RATES
FAILURE RATE COMPUTATIONS
FAILURE RATE SYNOPSIS
"DATA6"
FAILURE RATES FOR TPF MODEL

FIGURE IV-5 TPF MODEL STATISTICAL FAILURE RATE FLOW

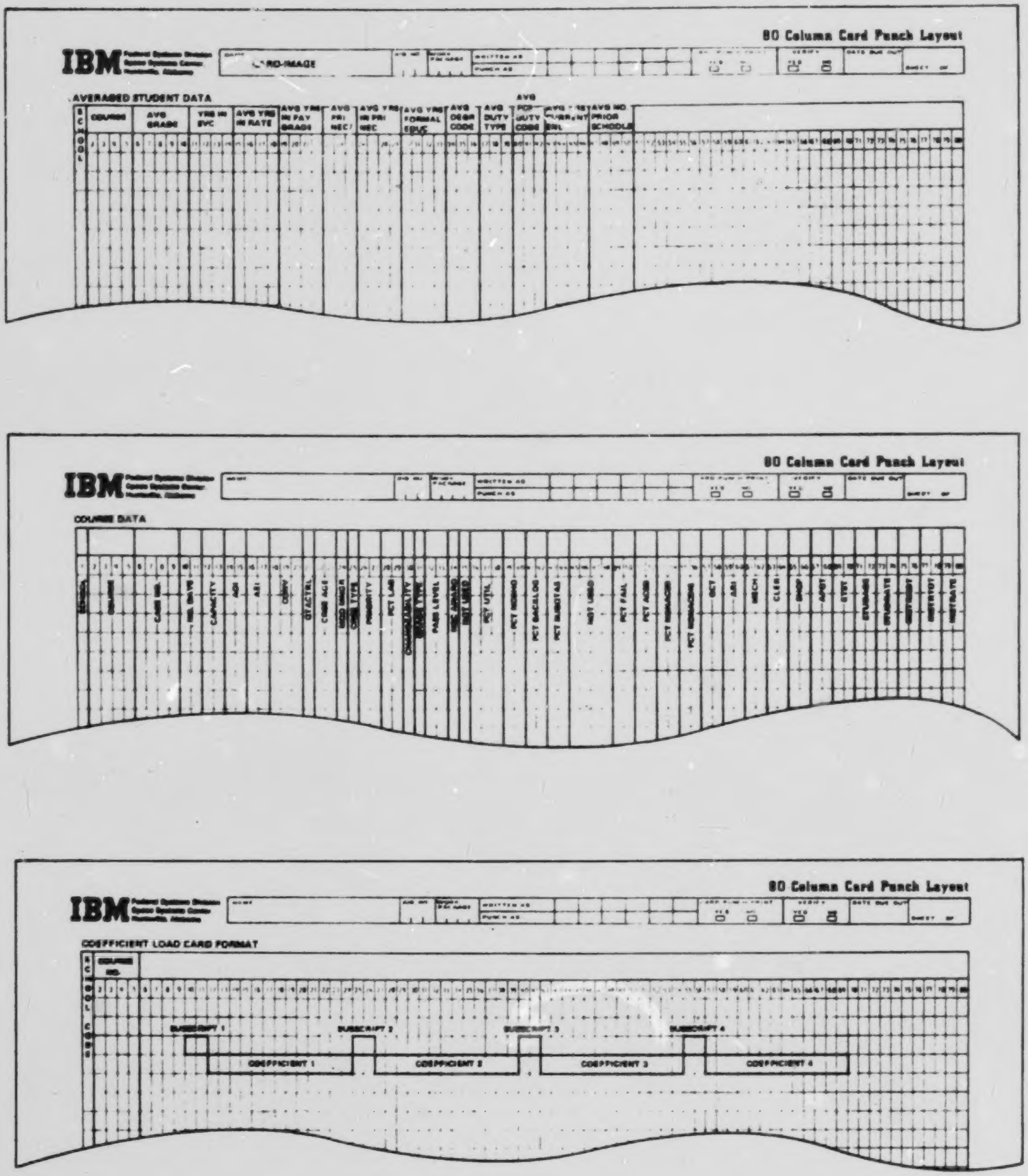

80 Column Card Punch Layout
IBM
CARD-IMAGE
AVERAGED STUDENT DATA
SCHOOL
COURSE
AVG GRADE
YRS IN SVC
AVG YRS IN RATE
AVG YRS IN PAY GRADE
AVG PRI NEC
AVG YRS IN PRI NEC
AVG YRS FORMAL EDUC
AVG DUTY TYPE
AVG PCP DUTY CODE
AVG NO PRIOR SCHOOLS
80 Column Card Punch Layout
IBM
COURSE DATA
CAPACITY
PRIORITY
PCT LAB
PASS LEVEL
PCT UTIL
PCT BACKLOG
PCT FAIL
CLER
SHOP
STDY
80 Column Card Punch Layout
IBM
COEFFICIENT LOAD CARD FORMAT
SCHOOL
COURSE NO.
SUBSCRIPT 1
SUBSCRIPT 2
SUBSCRIPT 3
SUBSCRIPT 4
COEFFICIENT 1
COEFFICIENT 2
COEFFICIENT 3
COEFFICIENT 4

FIGURE IV-6 FORMAT CARDS FOR STATISTICAL FAILURE CALCULATIONS DATA INPUT

```
//STATUP       JOB
//STEP1  EXEC  PROC=SORTD                    *SORT COURSE DATA CARDS*
//             PARM.SORT='MSG=AP'
//SORT.SORTOUT DD  DSN=DATA5,UNIT=2314,VOL=SER=NAVY01,
//             SPACE=(TRK,(5,5)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800),
//             DISP=(OLD,KEEP)
//SORT.SORTWK01  DD  UNIT=2314,SPACE=(CYL,5,,CONTIG)
//SORT.SORTWK02  DD  UNIT=2314,SPACE=(CYL,5,,CONTIG)
//SORT.SORTWK03  DD  UNIT=2314,SPACE=(CYL,5,,CONTIG)
//SORT.SYSIN  DD  *
    SORT FIELDS=(1,1,CH,A,2,4,CH,A),SIZE=E300
    END
//SORT.SORTIN  DD  *,DCB=BLKSIZE=80

          NOTE - COURSE STATISTICS CARDS GO HERE

//STEP2  EXEC  PROC=SORTD                    *SORT STUDENT DATA CARDS*
//             PARM.SORT='MSG=AP'
//SORT.SORTOUT DD  DSN=DATA9,UNIT=2314,VOL=SER=NAVY01,
//       SPACE=(TRK,(5,5)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800),
//             DISP=(OLD,KEEP)
//SORT.SORTWK01  DD  UNIT=2314,SPACE=(CYL,5,,CONTIG)
//SORT.SORTWK02  DD  UNIT=2314,SPACE=(CYL,5,,CONTIG)
//SORT.SORTWK03  DD  UNIT=2314,SPACE=(CYL,5,,CONTIG)
//SORT.SYSIN  DD  *
    SORT FIELDS=(1,1,CH,A,2,4,CH,A),SIZE=E300
    END
//SORT.SORTIN  DD  *,DCB=BLKSIZE=80

          NOTE - STUDENT AVERAGE CARDS GO HERE

//STEP3  EXEC  PROC=SORTD                    *SORT COEFFICIENT CARDS*
//             PARM.SORT='MSG=AP'
//SORT.SORTOUT DD  DSN=DATA10,UNIT=2314,VOL=SER=NAVY01,
//             SPACE=(TRK,(5,5)),DCB=(RECFM=FB,LRECL=80,BLKSIZE=800),
//             DISP=(OLD,KEEP)
//SORT.SORTWK01  DD  UNIT=2314,SPACE=(CYL,5,,CONTIG)
//SORT.SORTWK02  DD  UNIT=2314,SPACE=(CYL,5,,CONTIG)
//SORT.SORTWK03  DD  UNIT=2314,SPACE=(CYL,5,,CONTIG)
//SORT.SYSIN  DD  *
    SORT FIELDS=(1,1,CH,A,2,4,CH,A),SIZE=E300
    END
//SORT.SORTIN  DD  *,DCB=BLKSIZE=80

          NOTE - COEFFICIENT CARDS GO HERE

/*
```

FIGURE IV-7 JCL TO CREATE PASS/FAIL RATES BASED ON STATISTICAL PARAMETERS

```
//CALC          JOB
//JOBLIB DD     DSN=TPFMODEL,DISP=SHR
//FAIL1  EXEC   PGM=FAIL1
//SYSPRINT DD   SYSOUT=A
//COURSE    DD  DSN=DATA5,UNIT=2314,VOL=SER=NAVY01,DISP=(OLD,KEEP)
//STUD      DD  DSN=DATA9,UNIT=2314,VOL=SER=NAVY01,DISP=(OLD,KEEP)
//COMBO     DD  DSN=DATA7,UNIT=2314,VOL=SER=NAVY01,
//              DCB=(RECFM=FB,LRECL=405,BLKSIZE=2025),SPACE=(TRK,(5,5)),
//              DISP=(OLD,KEEP)
//FAIL2  EXEC   PGM=FAIL2
//SYSPRINT DD   SYSOUT=A
//SYSUT1    DD  DSN=DATA10,UNIT=2314,VOL=SER=NAVY01,
//              DCB=(RECFM=FB,LRECL=80,BLKSIZE=800),
//              DISP=(OLD,KEEP)
//SYSUT2    DD  DSN=DATA8,UNIT=2314,VOL=SER=NAVY01,
//              DCB=(RECFM=FB,LRECL=405,BLKSIZE=2025),
//              DISP=(OLD,KEEP)
//FAIL3  EXEC   PGM=FAIL3
//SYSPRINT DD   SYSOUT=A
//RFAIL     DD  SYSOUT=A
//VAR       DD  DSN=DATA7,UNIT=2314,VOL=SER=NAVY01,
//              DCB=(RECFM=FB,LRECL=405,BLKSIZE=2025),
//              DISP=(OLD,KEEP)
//COEFF     DD  DSN=DATA8,UNIT=2314,VOL=SER=NAVY01,DISP=(OLD,KEEP)
//FAIL      DD  DSN=DATA6,UNIT=2314,VOL=SER=NAVY01,
//              DCB=(RECFM=FB,LRECL=80,BLKSIZE=800),
//              DISP=(OLD,KEEP)
/*
```

FIGURE IV-7 (CONTINUED)

The data for input to the TPF model is loaded into a data set called DATA5. This is a permanent data set, and the data will remain until the next execution of program STATCAL.

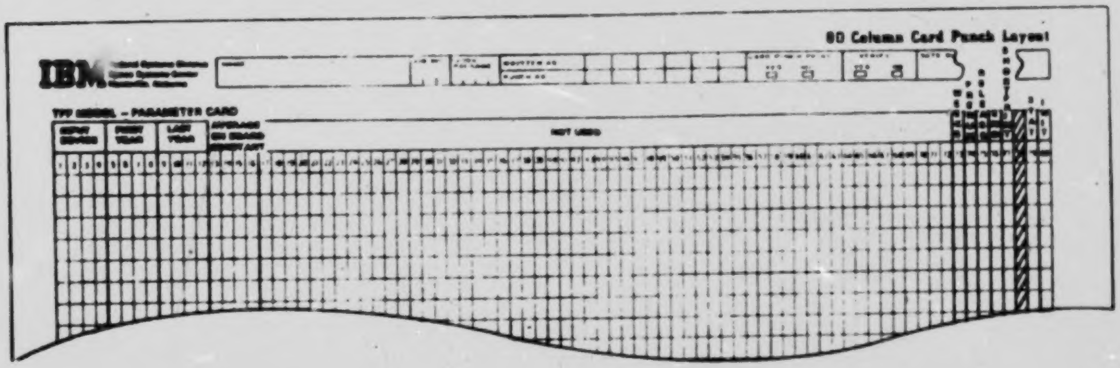
TPF MODEL EXECUTION. The TPF MODEL can be executed with data input either from cards, or with data unloaded from the DOTS data base. This dual input method was chosen to allow ease and flexibility of model operation, and to allow future interface with terminal based applications.

Parameter Card. The TPF model parameter card contains input fields necessary to set up and control the TPF model execution (See Figure IV-8A). The various data elements, their location and use are:

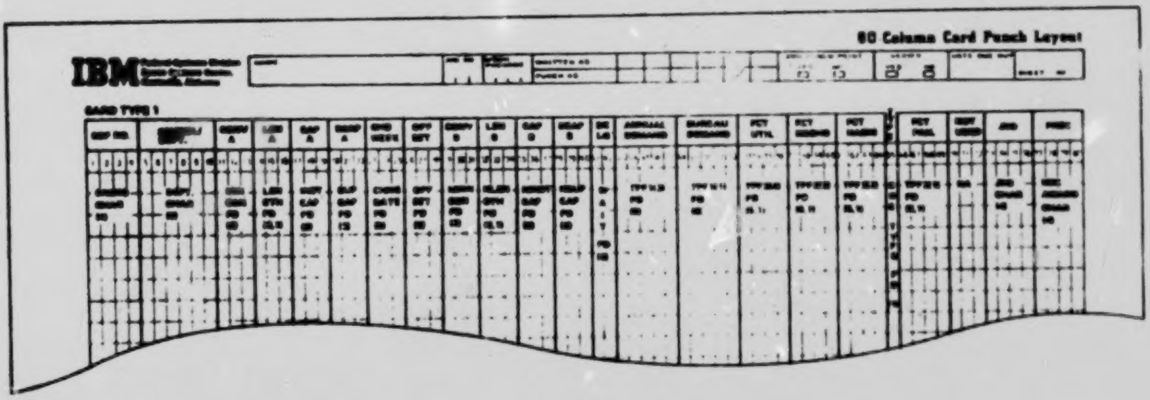
Element	Card Columns	Description
INPUT DEVICE	1-4	Enter 0010 for data from unloaded data base, blank or 0005 for card input, any other entry causes card input.
FIRST YEAR	5-8	First fiscal year of model run, defaults to 1975 if blank.
LAST YEAR	9-12	Last fiscal year of model run, maximum model run years clamped to 3 years single year is run if same as first year or blank.
AVERAGE ON-BOARD CONSTANT		Enter number of days to be used in calculating AOB. If the number is less than 300, only class days will be accumulated, otherwise weekend days

Element	Card Columns	Description
		will be counted for courses longer than 1 week. Use leading zero, example 0365. Default value is 250 if blank.
TRACE PRINT-OUT FLAGS		Each subroutine in the TPF model contains a print routine to allow detailed examination of each course as it is run. This trace is useful in determining number of students, no-shows, source, failures, and setbacks against an individual course convening.
WEEKS	73	A 1 will cause a printout of the number of courses active in a given week.
PRERUN	74	A 1 will cause a printout of each course released prior to a model start (initialization), and the average on-board figures remaining for the first quarter run.
RELEASE	75	A 1 will cause a printout of each course as it is released, given current length, utilization, source of students, no-shows, and a code if course is prerun.
END	76	A 1 will cause a printout of students in a course as it ends, number of students, current length, and setback students.
SHORTPRINT	77	A 2 will cause the standard print format to be ignored, and a short version of the data printout at a rate of 8 courses per page. No percentages are available with this printout.
STAT	79	A 1 will cause the model to read statistical failure rates, and overwrite historical rates from the DOTS data base or card input.
INIT	80	A 1 will cause the model to initialize all courses to assure those in session at model start are running. This is to assure proper AOB calculation during the first quarter of model run.

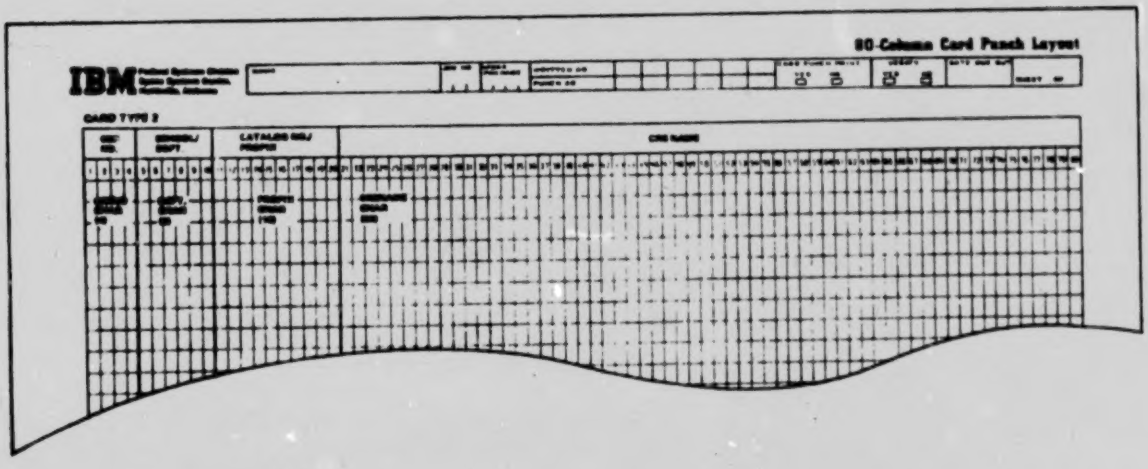
Alternate Card Input Formats. The following data elements amy be inputs to the TPF model, and may be entered by card, or unloaded from the DOTS data base. The formats for these cards is shown in Figures IV-8B and IV-8C. A description of these data elements, and their description follows:


80 Column Card Punch Layout
IBM
PARAMETER CARD
FIRST YEAR
LAST YEAR
AVERAGE
NOT USED

A - PARAMETER CARD


80 Column Card Punch Layout
IBM
CARD TYPE 1

B - COURSE (TYPE 1)


80-Column Card Punch Layout
IBM
CARD TYPE 2

C - NAMES (TYPE 2)

FIGURE IV-8 CARD INPUT FORMATS

CARD 1 INPUTS

Element	Format	Description
CDP NO	4 characters	The actual course CDP number, or any other identifying number for test runs.
DEPARTMENT/SCHOOL	6 characters	Any valid school code, must be left justified, may be blank for test runs.
CONVA	XXX	The number of annual convenings per year.
LENA	$\mathrm{XX}\underset{\wedge}{\mathrm{X}}$	Length in weeks of course. Decimal assumed, example 110 is 11.0 weeks.
CAPA	XXX	The capacity of each convening (students).
BCAPA	XXX	The number of seats in a course controlled by BUPERS.
CHGWEEK	XXX	The week number in which the course schedule or capacities should be changed.
OFFSET	XXX	The number of weeks the course schedule matrix should be shifted to the left or right. Described more fully in Volume 2. May be negative, but not greater than 51.
CONVB	XXX	The annual number of convenings following a schedule change.
LENB	$\mathrm{XX}\underset{\wedge}{\mathrm{X}}$	The course length following a schedule change, decimal assumed.
CAPB	XXX	The course capacity following a schedule change.
BCAPB	XXX	The BUPERS controlled seats following a schedule change.
BKL6	XX	The number of weeks one must wait for a quota requested through local quota control due to courses being fully booked.
ANNUAL DEMAND	XXXXX	The annual demand for the course by students not detailed by BUPERS (local demand).
BUREAU DEMAND	XXXXX	The planned BUPERS controlled demand for the course.

Element	Format	Description
PCT UTIL	XXX‸X	The historical utilization rate for the course. Decimal assumed.
PCT NO SHOW	XXX‸X	The historical no-show rate for the course. Decimal assumed.
PCT NADIS	XXX‸X	The historical non-academic disenrollment rate for the course. Decimal assumed.
TYPE	X	Course type (i.e., lockstep, team, etc.) leave blank for card input, code described in data base section.
PCT FAIL	XXX‸X	Historical failure rate for the course, decimal assumed.
JNO	4 characters	The last 4 digits of the local 5 number for the course.
PNEC	4 characters	The primary NEC number if the course awards one.
CDP	4 characters	Same as for Card 1.
SCHOOL/ DEPARTMENT	6 characters	Same as for Card 1.
CATALOG NO.	10 characters	The course catalog number
CRS NAME	60 characters	The course descriptive name.

TPF Model Execution. The execution of the TPF model is merely a matter of selecting and executing the proper set up steps, and then submitting the run job for execution. The JCL and optional data card input sequences are as follows:

```
//RUNMDL  JOB  MSGLEVEL=(0,0)
//JOBLIB  DD  DSN=TPFMODEL,DISP=SHR
//CARDUP  EXEC  PGM=CARDIN                *OPTIONAL NAMES INPUT*
//FT12F001  DD  DSN=DATA3,UNIT=2314,VOL=SER=NAVY01,DISP=(OLD,KEEP)
//FT05F001  DD  *

     OPTIONAL COURSE NAMES CARDS GO HERE

//TPFMDL  EXEC  PGM=MAIN                  *RUN TPF MODEL*
//FT08F001  DD  DSN=DATA6,UNIT=2314,VOL=SER=NAVY01,DISP=(OLD,KEEP)
//FT10F001  DD  DSN=DATA1,UNIT=2314,VOL=SER=NAVY01,DISP=(OLD,KEEP)
//FT11F001  DD  DSN=DATA2,UNIT=2314,VOL=SER=NAVY01,DISP=(OLD,KEEP)
//FT12F001  DD  DSN=DATA3,UNIT=2314,VOL=SER=NAVY01,DISP=(OLD,KEEP)
//FT06F001  DD  SYSOUT=A
//FT05F001  DD  *

     PARAMETER CARD GOES HERE

     OPTIONAL CARD COURSE DATA GOES HERE
```

FIGURE IV-9 JCL TO RUN TPF MODEL

These cards will cause the TPF model to run with either the card input, depending on the data input called for by the Parameter Card. If the Parameter Card calls for data base input, any card input data will be ignored. Figure IV-10 shows a general sequence for job runs to: (a) create a scratch data base, (b) to unload either data base and create new statistical failure rates, and (c) to execute the TPF MODEL. Figure IV-11 shows a sample of individual course outputs, while Figure IV-12 shows a sample school and Fleet Training Center format, and Figure IV-13 shows the scheduler matrix prior to offsets, for courses with a convening frequency of one to fifty.

STATISTICAL DATA

Course and student data were subjected to a number of statistical treatments in order to gain insight into the relationships between the attributes of the input parameters and the output parameters, and where possible to develop the required quantitative linkages. Certain data screening and presentation approaches were also used to permit derivation of quantitative relationships through inspection. The purpose of this section is to present the results of the statistical and data screening analyses. Since the Level 2 Validation and Verification tasks as outlined in Volume I will require similar data collection and analysis to test the predictive accuracy of the model, sufficient detail to permit replication of the process is included in this section. In addition, there will be a continuing need to update model parameters using an approach similar to that outlined here.

GENERAL METHODOLOGY. The model design as outlined in Volume II, to a large extent was influenced by the results of the results of the data analyses discussed in this section. Student and course data were collected from several sources, formatted as card images for input to the Statistical Package for the Social Sciences (SPSS) , system of computer programs, and then analyzed using the various routines which exist as a part of SPSS. The analysis proceeded from an initial examination of the general characteristics of the relevant data, through a series of cross tabulation and data presentation routines, and finally to more specific data treatments involving correlations and regressions. This final step was important for establishing portions of the model logic.

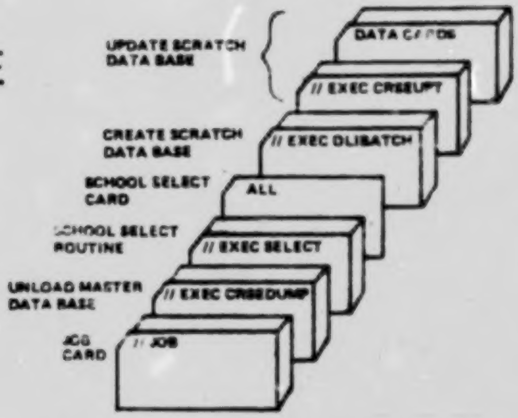
DATA COLLECTION. The major data collection steps leading to the statistical analyses were summarized in Volume I. Basically, the data collection efforts led to the establishment of two data bases - student characteristics (STUDENT) and course characteristics (COURSE).

STUDENT consists of approximately 4000 records on students attending the Fleet Training Center between 1 January and 30 July 1974. Data were obtained from DPSCLANT, BUPERS, and from the training schools at the FLETRACEN NORVA. They were merged into a single record containing student/course descriptive information, student/class grade averages, and student personnel data. A presentation of Student Statistical Data, Page IV-25, identifies the variables which were included in the STUDENT data base.

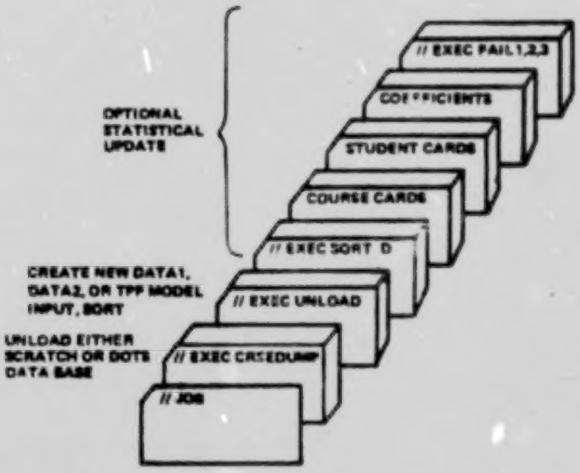
COURSE consists of data on 110 FLETRACEN NORVA courses obtained from previously described sources of student information as well as from training staff members at eleven individual schools. Major subdivisions of data were by course, enroll-

---

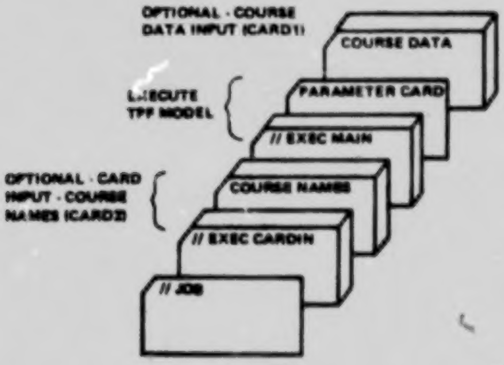
Statistical Package for the Social Sciences, National Opinion Research Center, University of Chicago.


UPDATE SCRATCH DATA BASE
DATA CARDS
// EXEC CRSEUPT
CREATE SCRATCH DATA BASE
// EXEC DLIBATCH
SCHOOL SELECT CARD
ALL
SCHOOL SELECT ROUTINE
// EXEC SELECT
UNLOAD MASTER DATA BASE
// EXEC CRSEDUMP
JOB CARD
// JOB

JOB STEPS TO CREATE AND UPDATE SCRATCH DATA BASE (OPTIONAL)


OPTIONAL STATISTICAL UPDATE
// EXEC PAIL1,2,3
COEFFICIENTS
STUDENT CARDS
COURSE CARDS
// EXEC SORT D
CREATE NEW DATA1, DATA2, OR TPF MODEL INPUT, SORT
// EXEC UNLOAD
UNLOAD EITHER SCRATCH OR DOTS DATA BASE
// EXEC CRSEDUMP
// JOB

JOB STEPS TO CREATE NEW TPF MODEL DATA BASE RUN DATA (OPTIONAL)


OPTIONAL - COURSE DATA INPUT (CARD1)
COURSE DATA
EXECUTE TPF MODEL
PARAMETER CARD
// EXEC MAIN
OPTIONAL - CARD INPUT - COURSE NAMES (CARD2)
COURSE NAMES
// EXEC CARDIN
// JOB

JOB STEPS TO RUN TPF MODEL

FIGURE IV-10 TPF JOB STEPS

```
                              TPF MODEL -- FISCAL YEAR 1975 SUMMARY                                              PAGE   1
                                      SCHOOL CODE  ACGR

AIR CONDITIONING AND REFRIGERATION
                                                                             QUARTERLY PROJECTIONS
CDP    J NO   CATALOG NO    NEC                            | 1 QTR FY 75 | 2 QTR FY 75 | 3 QTR FY 75 | 4 QTR FY 75 | ANNUAL  TOTAL |
3102   4552   A-720-0010   4296          ------------------|-------------|-------------|-------------|-------------|---------------|
                                         NUMBER OF CONVENINGS|   6 |       |   6 |       |   6 |       |   6 |       |   24 |        |
--- COURSE DATA ---  INITIAL CHANGE      COURSE CAPACITY     |  96 |       |  96 |       |  96 |       |  96 |       |  384 |        |
                                         UTILIZATION         | 100 |104.2%|  99 |103.1%| 100 |104.2%|  99 |103.1%|  398 |103.6%|
ANNUAL CONVENINGS        24       0      NO SHOWS            |   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|    0 |  0.0%|
COURSE LENGTH WKS       7.0     0.0      BACKLOG-STUDENTS/WKS|  44 |30 WKS|  45 |30 WKS|  45 |30 WKS|  46 |30 WKS|   46 |30 WKS|
COURSE CAPACITY          16       0      STUDENT DAYS / ADB  |4792 | 52.5 |4652 | 51.0 |4355 | 47.7 |5029 | 55.1 |18828 | 51.6 |
BUPERS SEATS             13       0                          |     |      |     |      |     |      |     |      |      |      |
                                         TOTAL PASS          |  78 | 78.0%|  77 | 77.8%|  76 | 76.0%|  77 | 77.8%|  308 | 77.4%|
ANNUAL DEMAND     75  CHANGE WEEK   0    TOTAL FAIL          |  12 | 12.0%|  12 | 12.1%|  13 | 13.0%|  12 | 12.1%|   49 | 12.3%|
BUPERS DEMAND    326  OFFSET  WKS   0    ACADEMIC  SETBACK   |   6 |  6.0%|   6 |  6.1%|   6 |  6.0%|   6 |  6.1%|   24 |  6.0%|
INITIAL BKLOG     43  BACKLOG WKS  30    NON-ACADEM DISENROLL|  10 | 10.0%|  10 | 10.1%|  11 | 11.0%|  10 | 10.1%|   41 | 10.3%|
                                         ------------------------------------------------------------------------------------------


ELECTRONIC DRV AIR SYSTEMS MAINTENANCE
                                                                             QUARTERLY PROJECTIONS
CDP    J NO   CATALOG NO    NEC                            | 1 QTR FY 75 | 2 QTR FY 75 | 3 QTR FY 75 | 4 QTR FY 75 | ANNUAL  TOTAL |
4695   4582   A-720-0024                 ------------------|-------------|-------------|-------------|-------------|---------------|
                                         NUMBER OF CONVENINGS|   6 |       |   6 |       |   6 |       |   6 |       |   24 |        |
--- COURSE DATA ---  INITIAL CHANGE      COURSE CAPACITY     |  60 |       |  60 |       |  60 |       |  60 |       |  240 |        |
                                         UTILIZATION         |  11 | 18.3%|  12 | 20.0%|  12 | 20.0%|  13 | 21.7%|   48 | 20.0%|
ANNUAL CONVENINGS        24       0      NO SHOWS            |   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|    0 |  0.0%|
COURSE LENGTH WKS       1.0     0.0      BACKLOG-STUDENTS/WKS|   0 | 0 WKS|   0 | 0 WKS|   0 | 0 WKS|   0 | 0 WKS|    0 | 0 WKS|
COURSE CAPACITY          10       0      STUDENT DAYS / ADB  |  55 |  0.6 |  60 |  0.7 |  60 |  0.7 |  65 |  0.7 |  240 |  0.7 |
BUPERS SEATS              2       0                          |     |      |     |      |     |      |     |      |      |      |
                                         TOTAL PASS          |  11 |100.0%|  12 |100.0%|  12 |100.0%|  13 |100.0%|   48 |100.0%|
ANNUAL DEMAND      9  CHANGE WEEK   0    TOTAL FAIL          |   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|    0 |  0.0%|
BUPERS DEMAND     40  OFFSET  WKS   0    ACADEMIC  SETBACK   |   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|    0 |  0.0%|
INITIAL BKLOG      0  BACKLOG WKS   0    NON-ACADEM DISENROLL|   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|    0 |  0.0%|
                                         ------------------------------------------------------------------------------------------


BOILER/FEEDWATER TEST
                                                                             QUARTERLY PROJECTIONS
CDP    J NO   CATALOG NO    NEC                            | 1 QTR FY 75 | 2 QTR FY 75 | 3 QTR FY 75 | 4 QTR FY 75 | ANNUAL  TOTAL |
536N   4522   A-651-0019                 ------------------|-------------|-------------|-------------|-------------|---------------|
                                         NUMBER OF CONVENINGS|  12 |       |  12 |       |  11 |       |  13 |       |   48 |        |
--- COURSE DATA ---  INITIAL CHANGE      COURSE CAPACITY     | 192 |       | 192 |       | 176 |       | 208 |       |  768 |        |
                                         UTILIZATION         | 155 | 80.7%| 154 | 80.2%| 141 | 80.1%| 168 | 80.8%|  618 | 80.5%|
ANNUAL CONVENINGS        48       0      NO SHOWS            |  49 | 24.0%|  50 | 24.5%|  46 | 24.6%|  53 | 24.0%|  198 | 24.3%|
COURSE LENGTH WKS       1.0     0.0      BACKLOG-STUDENTS/WKS| 313 |20 WKS| 320 |20 WKS| 326 |21 WKS| 334 |21 WKS|  334 |21 WKS|
COURSE CAPACITY          16       0      STUDENT DAYS / ADB  | 775 |  8.5 | 770 |  8.4 | 705 |  7.7 | 840 |  9.2 | 3090 |  8.5 |
BUPERS SEATS              0       0                          |     |      |     |      |     |      |     |      |      |      |
                                         TOTAL PASS          | 155 |100.0%| 154 |100.0%| 141 |100.0%| 167 | 99.4%|  617 | 99.8%|
ANNUAL DEMAND    843  CHANGE WEEK   0    TOTAL FAIL          |   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|   1 |  0.6%|    1 |  0.2%|
BUPERS DEMAND      0  OFFSET  WKS   0    ACADEMIC  SETBACK   |   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|    0 |  0.0%|
INITIAL BKLOG    307  BACKLOG WKS  20    NON-ACADEM DISENROLL|   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|   0 |  0.0%|    0 |  0.0%|
                                         ------------------------------------------------------------------------------------------
```

FIGURE IV-11 FIGURE IV-11 SAMPLE FISCAL YEAR SUMMARY - COURSE

```
                    TPF MODEL -- FISCAL YEAR 1975 SUMMARY
                           SCHOOL CODE  ACER




SCHOOL CODE ACER    SUMMARY

                                         QUARTERLY PROJECTIONS
                        |  1 QTR FY 75  |  2 QTR FY 75  |  3 QTR  FY 75 |  4 QTR FY 75  |  ANNUAL  TOTAL |
------------------------|---------------|---------------|---------------|---------------|----------------|
NUMBER OF CONVENINGS    |    25 |       |    27 |       |    25 |       |    28 |       |   105 |        |
COURSE CAPACITY         |   364 |       |   396 |       |   364 |       |   412 |       |  1536 |        |
UTILIZATION             |   278 | 76.4% |   299 | 75.5% |   276 | 75.8% |   314 | 76.2% |  1167 |  76.0% |
NO SHOWS                |    52 | 15.8% |    62 | 17.2% |    53 | 16.1% |    65 | 17.2% |   232 |  16.6% |
STUDENT DAYS / AOB      |  5646 | 61.9  |  5550 | 60.8  |  5166 | 56.6  |  6002 | 65.8  | 22364 |  61.3  |
                        |       |       |       |       |       |       |       |       |       |        |
TOTAL PASS              |   256 | 92.1% |   276 | 92.3% |   253 | 91.7% |   290 | 92.4% |  1075 |  92.1% |
TOTAL FAIL              |    12 |  4.3% |    13 |  4.3% |    13 |  4.7% |    14 |  4.5% |    52 |   4.5% |
ACADEMIC SETBACK        |     6 |  2.2% |     6 |  2.0% |     6 |  2.2% |     6 |  1.9% |    24 |   2.1% |
NON-ACADEM DISENROLL    |    10 |  3.6% |    10 |  3.3% |    10 |  3.6% |    10 |  3.2% |    40 |   3.4% |
-------------------------------------------------------------------------------------------------------------




                    TPF MODEL -- FISCAL YEAR 1975 SUMMARY

              ******** TOTALS FOR FLEET TRAINING CENTER ********




                                         QUARTERLY PROJECTIONS
                        |  1 QTR FY 75  |  2 QTR FY 75  |  3 QTR  FY 75 |  4 QTR FY 75  |  ANNUAL  TOTAL  |
------------------------|---------------|---------------|---------------|---------------|-----------------|
NUMBER OF CONVENINGS    |   779 |       |   722 |       |   727 |       |   755 |       |   2983 |        |
COURSE CAPACITY         | 19827 |       | 18556 |   .   | 18415 |       | 19690 |       |  76488 |        |
UTILIZATION             | 15025 | 75.8% | 11391 | 61.4% | 10924 | 59.3% | 11562 | 58.7% |  48902 |  63.9% |
NO SHOWS                |  2298 | 13.3% |  1884 | 14.2% |  1773 | 14.0% |  1922 | 14.3% |   7877 |  13.9% |
STUDENT DAYS / AOB      | 85084 | 932.4 | 72006 | 789.1 | 69943 | 766.5 | 74122 | 812.3 | 301155 |  825.1 |
                        |       |       |       |       |       |       |       |       |        |        |
TOTAL PASS              | 14107 | 93.9% | 10614 | 93.2% | 10207 | 93.4% | 10765 | 93.1% |  45693 |  93.4% |
TOTAL FAIL              |   692 |  4.6% |   576 |  5.1% |   533 |  4.9% |   585 |  5.1% |   2386 |   4.9% |
ACADEMIC SETBACK        |    34 |  0.2% |    33 |  0.3% |    31 |  0.3% |    34 |  0.3% |    132 |   0.3% |
NON-ACADEM DISENROLL    |   226 |  1.5% |   201 |  1.8% |   184 |  1.7% |   212 |  1.8% |    823 |   1.7% |
--------------------------------------------------------------------------------------------------------------
```

FIGURE IV-12 SAMPLE FISCAL YEAR SUMMARY - SCHOOL AND FLEET TRAINING CENTER

```
                           TPF MODEL COURSE RELEASE SCHEDULER

ANNUAL    *** 1ST QTR  ***    *** 2ND QTR  ***    *** 3RD QTR  ***    *** 4TH QTR  ***
 CONV       (WKS 1-13)          (WKS 1-13)          (WKS 1-13)          (WKS 1-13)

   1     X ---- ---- ----    - ---- ---- ----    - ---- ---- ----    - ---- ---- ----
   2     X ---- ---- ----    - ---- ---- ----    - X--- ---- ----    - ---- ---- ----
   3     X ---- ---- ----    - ---X ---- ----    - ---- ---- -X--    - ---- ---- ----
   4     X ---- ---- ----    X ---- ---- ----    - X--- ---- ----    X ---- ---- ----
   5     X ---- ---- -X--    - ---- --X- ----    - ---- -X-- ----    - --X- ---- ----
   6     X ---- ---- X---    - ---X ---- ----    - X--- ---- -X--    - ---- X--- ----
   7     - X--- ---X ----    - -X-- ---- X---    - ---- X--- ---X    - ---- -X-- ----
   8     X ---- --X- ----    X ---- -X-- ----    - X--- ---X ----    - X--- --X- ----
   9     - X--- -X-- ---X    - ---X ---- -X--    - ---X ---- -X--    - -X-- ---X ----
  10     X ---- X--- -X--    - -X-- --X- ----    - X--- -X-- --X-    - --X- ---X ----
  11     X ---- X--- -X--    - -X-- -X-- -X--    - ---X ---- X---    - X--- X--- X---
  12     - X--- X--- X---    X ---X ---X ----    - X--- -X-- -X--    - X--- X--- X---
  13     - X--- X--- X--X    - --X- --X- --X-    - ---X ---X --X-    - -X-- -X-- -X--
  14     X ---X ---X --X-    - -X-- X--- X---    - -X-- X--- X--X    - --X- -X-- -X--
  15     X --X- --X- -X--    X ---X --X- -X--    - --X- -X-- X---    X --X- -X-- -X--
  16     X --X- --X- -X--    X --X- -X-- X---    - X--- X--X --X-    - X--X --X- -X--
  17     - X--X --X- -X-X    - -X-- X--X --X-    - --X- -X-- X--X    - -X-- X--X --X-
  18     X --X- -X-- X--X    - -X-- X-X- -X--    - -X-- X--X --X-    - X-X- -X-- X-X-
  19     - X-X- X--- X-X-    - X-X- -X-X --X-    - --X- -X-X --X-    - X-X- -X-- X--X
  20     X --X- X--X -X--    X -X-- X-X- -X--    - X--X -X-- X-X-    - X-X- -X-X --X-
  21     - X-X- X--X -X-X    - -X-X -X-- X-X-    - -X-- X-X- -X-X    - X--X -X-X --X-
  22     - X-X- X--X -X-X    - -X-X -X-X -X--    - -X-X -X-X -X-X    - -X-X --X- X-X-
  23     - X-X- X-X- X-X-    - X-X- X-X- X-X-    - ---X X-X- X-X-    - X-X- X-X- X-X-
  24     - X-X- X-X- X-X-    X -X-X -X-X -X--    - -X-X -X-X -X-X    - X-X- X-X- X-X-
  25     X -X-X -X-X -X-X    - X-X- X-X- X-X-    - -X-X -X-X -X-X    - X-X- X-X- X-X-
  26     X X-X- X-X- X-X-    X -X-X -X-X -X--    - X-X- X-X- X-X-    X -X-X -X-X -X-X
  27     X X-X- X-X- X-X-    X -X-X -XX- X-X-    - X-X- X-XX -X-X    - X-X- X-X- X-X-
  28     X -X-X -XX- X-X-    X X-X- X-X- X-X-    - X-X- X-X- X-X-    X X-X- XX-X -X-X
  29     X -X-X -XX- X-X-    X X-X- X-XX -X--    - X-XX -X-X X-X-    X -XX- X-X- XX-X
  30     - XX-X -XX- X-XX    - X-XX -X-X X-X-    - -XX- X-XX -X-X    X -X-X X-X- XX-X
  31     X -X-X X-XX -X-X    X -X-X X-X- XX--    - XX-X X-X- XX-X    X -X-X X-XX -XX-
  32     - XX-X X-XX -XX-    X X-XX -X-X X-X-    - X-XX -XX- XX-X    X -X-X X-XX -XX-
  33     X -XX- XX-X X-X-    X X-XX -XX- XX--    - XX-X X-XX -XX-    X X-XX -XX- XX-X
  34     - XX-X XX-X X-XX    - XX-X X-XX -XX-    - -XXX -XX- XX-X    X -XX- XX-X X-XX
  35     - XX-X XX-X X-XX    - XXX- XX-X X-X-    - XX-X X-XX -XXX    - XX-X X-XX X-XX
  36     - XXX- XXX- XX-X    X X-XX -XXX -XX-    - X-XX -XXX -XX-    X XX-X X-XX X-XX
  37     X -XXX -XXX -XX-    X XX-X XX-X XX--    - XXX- XXX- XX-X    X X-XX X-XX X-XX
  38     X -XXX -XXX -XXX    - XXX- XXX- XXX-    - -XXX X-XX X-XX    X -XXX -XXX -XXX
  39     - XXXX -XXX X-XX    X X-XX X-XX X-X-    - XXX- XXXX -XXX    X -XXX -XXX -XXX
  40     - XXXX -XXX X-XX    X X-XX XX-X XXX-    - -XXX X-XX XX-X    X XX-X XXX- XXXX
  41     X -XXX X-XX XXX-    X XXX- XXXX X-X-    - XXX- XXXX X-XX    X X-XX XXX- XXXX
  42     - XXXX XX-X XXXX    - XXXX X-XX XXX-    - -XXX XXX- XXXX    X -XXX XX-X XXXX
  43     X -XXX XXX- XXXX    X X-XX XXXX -XX-    - XXXX -XXX XXX-    X XXXX X-XX XXXX
  44     - XXXX XXXX -XXX    X XXX- XXXX XXX-    - XXXX -XXX X-XX    X XXXX -XXX XXXX
  45     - XXXX XXXX X-XX    X XXXX XX-X XXX-    - XXXX X-XX XXXX    X XX-X XXXX XXXX
  46     - XXXX XXXX XXXX    - XXXX XXXX XXX-    - -XXX XXXX XXXX    - XXXX XXXX XXXX
  47     - XXXX XXXX XXXX    X XXX- XXXX XXX-    - XXXX XXXX X-XX    X XXXX XXXX XXXX
  48     - XXXX XXXX XXXX    X XXXX XXXX XXX-    - -XXX XXXX XXXX    X XXXX XXXX XXXX
  49     - XXXX XXXX XXXX    X XXXX XXXX XXX-    - XXXX XXXX XXXX    X XXXX XXXX XXXX
  50     X XXXX XXXX XXXX    X XXXX XXXX XXX-    - XXXX XXXX XXXX    X XXXX XXXX XXXX

FOR EACH WEEK IN THIS SCHEDULE:    AN 'X' INDICATES THE COURSE WILL BE RELEASED
                                   A  '-' INDICATES THE COURSE WILL NOT BE RELEASED
```

NOTE: IF ANNUAL CONVENINGS FOR A COURSE ARE GREATER THAN 50, THE COURSE WILL BE TREATED AS MULTIPLE COURSES, EACH HAVING 50 OR LESS CONVENINGS PER YEAR.

FIGURE IV-13 COURSE RELEASE SCHEDULER

ment, student, and instructor. A sample data collection form provided to the Supply School is shown in Figure IV-14. A complete list and description of the variables contained in the COURSE data base are included in a presentation of Course Statistical Data, Page IV-111.

While the focus of this section is on the data collected for statistical treatment, it should be pointed out that: 1) extensive amounts of information were obtained from interviews, instructions, reports, and correspondence, and were not included in the statistical data bases; and 2) much of the information intended for statistical analysis contributed (as did 1, above) to some of the more logical and less quantitative aspects of model design.

DATA FORMATTING AND INTERPRETATION. The selection of variables for statistical treatment was determined in two ways. First, the model functional specifications identified the key variables requiring solution by the models. Two aspects of the training process were of interest. One was the quantification of students entering training. This involved an analysis of training demand considering numbers of potential enrollees, changes in requests prior to class start, failure of students to show up for class (no-shows), and availability of students who could be substituted at the last minute in order to improve course utilization. Another was the loss of students occurring after the training program had begun. A second major determinant in the variable selection process was the availability of existing data. Personnel data maintained by BUPERS were important inputs in this regard. DPSCLANT at Norfolk also contributed substantially to the identification and quantification of key variables. As was noted previously, two statistical data bases were established - STUDENT and COURSE.

Student Statistics. Forty student-related variables were identified which might provide potential insight into model parameters. Each of the 3766 students is considered as a case or observation. The data related to each observation are tabulated for each of the forty variables and shown in the following presentation of Student Statistical Data.

BEST COPY AVAILABLE

SCHOOL NAME: SUPPLY
SCHOOL CODE: G

A		NUMBER:	0462	0482		6512	6522	6532	6542	6552	6562	6572	6592	6602	6702	6712	6722
B	COURSE DATA	DAYS LENGTH:	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999
C		CAPACITY:	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999
D		AV OFF INPUT:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
E		AV ENL INPUT:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
F		CONVENE/YEAR:	999	999	999	999	999	999	999	999	999	999	999	999	999	999	999
G		QUOTA CONTROL:	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
H		COURSE AGE (YRS):	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
I		MODEL MNGR (CCMM):	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
J		TYPE:	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
K		PRIORITY:	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
L		% LAB:	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
M		CHANGEABILITY:	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
N		GRADE TYPE:	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
O		PASS LEVEL:	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
P	ENROLLMENT	% UTILIZED:	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Q		% NO SHOWS:	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
R		BACKLOG (WEEKS):	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
S		% SUB QUOTAS:	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
T	STUDENT DATA	% FAILURES:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
U		% ACAD SETBACKS:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
V		% NONAC SETBACKS:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
W		% NONAC DISENROLE:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
X		AV GCT SCORE:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Y		AV ARI SCORE:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Z		AV MECH SCORE:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
0		AV CLER SCORE:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1		AV SHOP SCORE:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
2		AV AFQT SCORE:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
3		AV ETST SCORE:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
4		AV STUDENT AGE:	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
5		AV STUDENT RATE:	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
6	INSTRUCTUR	ROTATION FREQ:	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
7		AV # PER CLASS:	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
8		AV PAY GRADE:	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

STUDENT
STATISTICAL
DATA

(Because of the number of tables and charts to be displayed in this section, separate figure numbers have not been assigned.)

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Descriptive Summary of Student Variables

The following tables and histograms display the number of cases (students) by variable value. In cases where no definitive quantity for the variable was available, the case is classified in a "missing values" category. The tables give the absolute number of cases per variable value (absolute frequency), the percentage each variable value is of the total including missing values (relative frequency), and the percentage each variable value is of the total excluding missing values (adjusted frequency). The histograms portray graphically the cases per variable value and indicate the absolute frequency and relative frequency that each value occurred. The key statistics which characterize the sample distribution for each variable appear at the end of each histogram.

Most of the tables and histograms are value labeled so that no additional information is required for interpretation. Certain variables, e.g., AGE, have been recoded to reduce the number of values. In these instances, the statistics will be based upon the recoded values rather than on the original. For example, the mean age is shown as 4.721, because of the recoding. In actuality, the true mean age is approximately 24.5. The following list gives additional information and references which may be needed to interpret a particular variable.

SCHOOL	Ten of the eleven schools at FLETRACEN NORVA were sampled. The school names are identified as value labels.
COURSE	Forty-two courses were sampled and are identifiable directly from the value listed.
CONVENE	The value listed for this variable gives the convening date in the format YMMDD. The high order digit for year is an assumed "7".
AGE	The age variable was recoded so that about twelve percent of the sample fell into each value category. The value labels identify the age categories grouped per value 1-9. The values 72, 73, and 74 are treated as "missing values" and appear because "Date of Birth" was missing from the original data.
SERVTIME	The values for the variable, Number of Years of Service, can be read directly. The category 0.0 summarizes students with less than one full year of service, etc. The values 72, 73, and 74 are treated as "missing values" and appear because the "Active Duty Base Date" was missing from the original data.

RATE - The value listed for this variable gives the paygrade category 1-9 in which the student was classified at time of school enrollment.

RATETIME - The values for the variable, Number of Years in Rate, can be read directly. The values 72, 73, and 74 are treated as "missing values" and appear because the "Time in Rate Eligibility Date" was missing from the original data.

PAYGTIME - The values for the variable, Number of Years in Paygrade, can be read directly. The values 72, 73, and 74 are treated as "missing values" and appear because the "Effective Date of Paygrade" was missing from the original data.

PRINEC - This variable identifies whether or not the student had been awarded a Primary NEC.

PNECTIME - The values for the variable, Number of Years in Primary NEC, can be read directly. The values 72, 73, and 74 are treated as "missing values" and appear because the "PNEC Date" was missing from the original data.

YRSEDUC - The values for the variable, Number of Years of Formal Education, can be read directly. A value of 12.0 would be equivalent to a High School graduate.

DEGREE - The values for this variable are self-explanatory and indicate the highest level of formal education for which a degree had been awarded.

TYPECOM - The source command or service for students attending the FLETRACEN NORVA is described by the values of this variable.

SHIPTYPE - The source ship for students attending the FLETRACEN NORVA is described by the values of this variable. The first entry in the table and histogram (1266 students) represents those students for which no ship type was designated at time of enrollment. They are assumed to have come from shore assignments.

ABRDSHIP - This variable identifies whether or not the student was assigned to a specific ship type at time of enrollment. The SHORE DUTY value agrees with the students in the SHIPTYPE category not assigned to a ship (1266 students).

GCT - The General Classification Test score values were recoded into 3-step intervals in order to reduce the number of values. For example, the value 23.0 accounts for students with test scores of 22, 23, or 24.

ARI - The Arithmetic Test score was recoded in the manner as GCT.

MECH - The Mechanical Test Score was recoded in the same manner as GCT.

CLER - The Clerical Aptitude Test score was recoded in the same manner as GCT.

SHOP - The Shop Practices Test score was recoded in the same manner as GCT.

AFQT - The Armed Forces Qualification Test score was recoded in the same manner as GCT.

ETST - The Electronics Technician Selection Test score was recoded in the same manner as GCT.

TESTGRP - The Test Score Group Code values 1-5 can be ready directly. The value 0.0 is treated as a "missing value" indicating those students who may not have been mentally examined.

INSTDAYS - The values for the Days of Instruction variable can be read directly and indicate the course length in days that the student attended.

GRADE - The final course grade for some 2515 students is represented by the values of this variable. Since several grading systems exist, all were converted to a 100 point scale. Scores were recoded into 5-step intervals. For example, the 97.5 value represents all students with grades between 95.0 and 99.9.

STANDING - The values for this variable represent the students relative standing in the class. The individual standing of a student was calculated by obtaining class average and dividing it into the students grade. The result was then multiplied by ten. A value of 10.0, therefore, represents a student whose final grade was the same as the class average. The higher the value, the higher the student finished in the class.

ACTYCODE - The Student Action Code describes the student's status at the completion of the class in which he was enrolled. The value labels are self-explanatory and the value sequence was arbitrarily established from most favorable (1.0 for a student accelerating in a non-Individualized Learning System Class) to least favorable (9.0 for a student disenrolled for academic reasons).

NECAWARD - The values for this variable identify whether or not the student attended a class which awarded an NEC or XNEC.

QTASTAT - The Quota Duty Status variable defines the student status at time of enrollment. Further amplification of the values for this variable is as follows:

1. TEMAD LT 20 WKS - Student will be returned to duty station.
2. TEM FLT LT 20 - Ultimate duty station previously assigned. Member will be transferred upon completion of course, unless scheduled to attend another course conducted by same command.
3. TEMP FURAS - Ultimate duty station to be assigned.
5. TEMD FURAS - Scheduled to attend more than one course at same command. Code 3 is used for last course.
9. NOT ACTDU NAVY - Assigned to all students other than active duty Navy members.

PCS - The values for the Permanent Change of Station variable identify whether or not the student was on PCS orders when attending class.

BRANCH - The Branch of Service variable values are self-explanatory.

CAPACITY - The Class Capacity variable describes the total number of seats available in the class in which the student was enrolled.

AVEOFFIN - The values for this variable give the Average Number of Officers expected to attend the class in which the student was enrolled.

AVEENLIN - The values for this variable give the Average Number of Enlisted Personnel expected to attend the class in which the student was enrolled.

VRBONUS - The values for this variable indicate whether a student had enlisted (1 in first position), extended (2 in first position), or reenlisted (3 in first position), to qualify for the Variable Reenlistment Bonus. The second digit specifies the term of the enlistment/extension in years. For example, a value of 22.0 indicates the student had extended for two years.

TYPEENL - The values for this variable indicate the type of transaction applicable to the student when identified as a gain to Navy enlisted strength. The values are interpreted as follows:

0 - Not reported

1 - First enlistment, no prior service, no bonus

10 - First enlistment, prior service, bonus

11 - First enlistment, no bonus

30 - Reenlistment within 24 hours, bonus

31 - Reenlistment within 24 hours, no bonus

40 - Reenlistment within 3 months, bonus

41 - Reenlistment within 3 months, no bonus

50 - Reenlistment over 3 months, bonus

51 - Reenlistment over 3 months, no bonus

84 - USN or USNR from Naval Academy Midshipman

91 - Surrender of deserter

93 - Delivery of deserter

95 - Voluntarily recalled to active duty

97 - Error gain.

NMBRENL - The values for this variable are self-explanatory and can be interpreted from the value labels.

CAREER - The values for this variable are self-explanatory and can be interpreted from the value labels. This variable indicates the student's career intentions at the end of his current enlistment.

NMBRSCOL - The values for this variable represent a count of the Number of Formal Service Schools attended by the student. Since only five schools can be recorded in the Enlisted Master Record, the value 5.0 represents five or more schools.

```
FLETRACEN NORVA - STUDENT STATISTICS - PTC LEVEL                                         09/04/74      PAGE    3

VARIABLE  FORMAT  PERM      MISSING VALUES

SEQNUM       0      T
SUBFIL       A      T
CASWGT       4      T
SCHOOL       A      T
COURSE       0      T
CONVENE      0      T
CASE         0      T
AGE          1      T          72.0           73.0           74.0
SERVTIME     1      T          72.0           73.0           74.0
RATE         1      T
RATETIME     1      T          72.0           73.0           74.0
PAYGTIME     1      T          72.0           73.0           74.0
PRINEC       1      T
PNECTIME     1      T          72.0           73.0           74.0
YRSEDUC      1      T           0.0
DEGREE       0      T
TYPECOM      0      T
SHIPTYPE     A      T
ABRDSHIP     1      T
GCT          1      T           0.0
ARI          1      T           0.0
MECH         1      T           0.0
CLER         1      T           0.0
SHOP         1      T           0.0
AFQT         1      T           0.0
ETST         1      T           0.0
TESTGRP      1      T           0.0
INSTDAYS     1      T           0.0
GRADE        1      T           0.0
STANDING     1      T           0.0
ACTYCODE     1      T           0.0
NECAWARD     1      T
QTASTAT      0      T
PCS          1      T
BRANCH       A      T
CAPACITY     1      T
AVEOFFIN     1      T
AVEENLIN     1      T
VRBONUS      1      T           0.0
TYPEENL      0      T
NMBRENL      1      T
CAREER       1      T           0.0
NMBRSCOL     1      T


LIST OF THE  43 VARIABLES IN THE FILE..
SEQNUM     SUBFIL     CASWGT     SCHOOL     COURSE     CONVENE    CASE       AGE        SERVTIME   RATE
RATETIME   PAYGTIME   PRINEC     PNECTIME   YRSEDUC    DEGREE     TYPECOM    SHIPTYPE   ABRDSHIP   GCT
ARI        MECH       CLER       SHOP       AFQT       ETST       TESTGRP    INSTDAYS   GRADE      STANDING
ACTYCODE   NECAWARD   QTASTAT    PCS        BRANCH     CAPACITY   AVEOFFIN   AVEENLIN   VRBONUS    TYPEENL
NMBRENL    CAREER     NMBRSCOL
```

```
DUMP OF LABEL INFORMATION..

VALUE LABEL FOR     SCHOOL                    B       ACER
VALUE LABEL FOR     SCHOOL                    C       ELEC
VALUE LABEL FOR     SCHOOL                    D       DC-FF
VALUE LABEL FOR     SCHOOL                    F       IT-AD
VALUE LABEL FOR     SCHOOL                    G       S-DA
VALUE LABEL FOR     SCHOOL                    H       ET
VALUE LABEL FOR     SCHOOL                    J       COMM
VALUE LABEL FOR     SCHOOL                    K       TTM
VALUE LABEL FOR     SCHOOL                    M       NAV
VALUE LABEL FOR     SCHOOL                    N       ASW-EW
VALUE LABEL FOR     AGE                         1.0   17-19
VALUE LABEL FOR     AGE                         2.0   20
VALUE LABEL FOR     AGE                         3.0   21
VALUE LABEL FOR     AGE                         4.0   22-23
VALUE LABEL FOR     AGE                         5.0   24-25
VALUE LABEL FOR     AGE                         6.0   26-28
VALUE LABEL FOR     AGE                         7.0   29-32
VALUE LABEL FOR     AGE                         8.0   33-36
VALUE LABEL FOR     AGE                         9.0   37-49
VARIABLE LABEL FOR SERVTIME                           NO. OF YEARS IN SERVICE
VARIABLE LABEL FOR RATETIME                           NO. OF YEARS IN RATE
VARIABLE LABEL FOR PAYGTIME                           NO. OF YEARS IN PAYGRADE
VARIABLE LABEL FOR PRINEC                             PRIMARY NEC EXISTS
VALUE LABEL FOR     PRINEC                      0.0   NO NEC EXISTS
VALUE LABEL FOR     PRINEC                      1.0   NEC EXISTS
VARIABLE LABEL FOR PNECTIME                           NO. OF YEARS IN PRIMARY NEC
VARIABLE LABEL FOR YRSEDUC                            NO. YEARS OF FORMAL EDUCATION
VALUE LABEL FOR     DEGREE                      1.    NO DEGREE
VALUE LABEL FOR     DEGREE                      2.    HIGH SCHOOL
VALUE LABEL FOR     DEGREE                      3.    TWO YRS COL OR LESS
VALUE LABEL FOR     DEGREE                      4.    ASSOC DEGREE
VALUE LABEL FOR     DEGREE                      5.    BACHELORS DEG
VALUE LABEL FOR     DEGREE                      6.    MASTERS DEG
VALUE LABEL FOR     DEGREE                      7.    DOCTORS DEG
VARIABLE LABEL FOR TYPECOM                            TYPE COMMAND
VALUE LABEL FOR     TYPECOM                     0.    MARINES
VALUE LABEL FOR     TYPECOM                     1.    COMCRUDESLANT
VALUE LABEL FOR     TYPECOM                     2.    COMINEWARFOR
VALUE LABEL FOR     TYPECOM                     3.    COMNAVAIRLANT
VALUE LABEL FOR     TYPECOM                     4.    COMPHIBLANT
VALUE LABEL FOR     TYPECOM                     5.    COMSERVLANT
VALUE LABEL FOR     TYPECOM                     6.    COMSUBLANT
VALUE LABEL FOR     TYPECOM                     7.    COAST GUARD
VALUE LABEL FOR     TYPECOM                     8.    COMTRALANT
VALUE LABEL FOR     TYPECOM                     9.    OTHER
VARIABLE LABEL FOR SHIPTYPE                           SHIP TYPE ASSIGNED
VARIABLE LABEL FOR ABRDSHIP                           ASSIGNED SHIP DUTY
VALUE LABEL FOR     ABRDSHIP                    0.0   SHORE DUTY
VALUE LABEL FOR     ABRDSHIP                    1.0   SHIP DUTY
VARIABLE LABEL FOR GCT                                RECODED INTO 3-STEP INTERVALS
VARIABLE LABEL FOR ARI                                RECODED INTO 3-STEP INTERVALS
VARIABLE LABEL FOR MECH                               RECODED INTO 3-STEP INTERVALS
VARIABLE LABEL FOR CLER                               RECODED INTO 3-STEP INTERVALS
VARIABLE LABEL FOR SHOP                               RECODED INTO 3-STEP INTERVALS
VARIABLE LABEL FOR AFQT                               RECODED INTO 3-STEP INTERVALS
VARIABLE LABEL FOR ETST                               RECODED INTO 3-STEP INTERVALS
VARIABLE LABEL FOR TESTGRP                            TEST GROUP
VARIABLE LABEL FOR INSTDAYS                           DAYS OF INSTRUCTION
VARIABLE LABEL FOR GRADE                              RECODED INTO 5-STEP INTERVALS
VARIABLE LABEL FOR STANDING                           RELATIVE CLASS STANDING
VARIABLE LABEL FOR ACTYCODE                           STUDENT FINAL ACTIVITY STATUS
VALUE LABEL FOR     ACTYCODE                    1.0   ACCELERATED
VALUE LABEL FOR     ACTYCODE                    2.0   EARLY GRAD ILS
VALUE LABEL FOR     ACTYCODE                    3.0   GRADUATED
VALUE LABEL FOR     ACTYCODE                    4.0   NON-ACAD STBK
VALUE LABEL FOR     ACTYCODE                    5.0   NON-ACAD DISENR
VALUE LABEL FOR     ACTYCODE                    6.0   ACAD SETBACK
VALUE LABEL FOR     ACTYCODE                    9.0   ACAD DISENROLL
VARIABLE LABEL FOR NECAWARD                           COURSE AWARDS NEC
VALUE LABEL FOR     NECAWARD                    1.0   NO NEC AWARDED
VALUE LABEL FOR     NECAWARD                    2.0   NEC RECOMMENDED
VALUE LABEL FOR     NECAWARD                    3.0   XNEL RECOM
VARIABLE LABEL FOR QTASTAT                            STUDENT DUTY STATUS
VALUE LABEL FOR     QTASTAT                     1.    TEMAD LT 20 WKS
VALUE LABEL FOR     QTASTAT                     2.    TEM PPT LT 20
VALUE LABEL FOR     QTASTAT                     3.    TEMP FURAS
VALUE LABEL FOR     QTASTAT                     4.    DUINS FURAS
VALUE LABEL FOR     QTASTAT                     4.    DUINS FUR GT 20
VALUE LABEL FOR     QTASTAT                     5.    TEMU FURAS
VALUE LABEL FOR     QTASTAT                     6.    DUINS FUR GT 20
VALUE LABEL FOR     QTASTAT                     7.    PRG STUDENT
VALUE LABEL FOR     QTASTAT                     8.    SIT-IN STUDENT
VALUE LABEL FOR     QTASTAT                     9.    NOT ACTDU NAVY
VARIABLE LABEL FOR PCS                                ON PCS ORDERS
VALUE LABEL FOR     PCS                         1.0   PERM CHG STAT
VALUE LABEL FOR     PCS                         2.0   NON PCS
VARIABLE LABEL FOR BRANCH                             BRANCH OF SERVICE
VALUE LABEL FOR     BRANCH                    D       OFF ACDU NAVY
VALUE LABEL FOR     BRANCH                    B       ENL ACDU NAVY
VALUE LABEL FOR     BRANCH                    H       OFF RESERVE USN
VALUE LABEL FOR     BRANCH                    E       ENL RESERVE USN
VALUE LABEL FOR     BRANCH                    J       OFF ARMY
VALUE LABEL FOR     BRANCH                    K       ENL ARMY
VALUE LABEL FOR     BRANCH                    L       OFF AIR FORCE
VALUE LABEL FOR     BRANCH                    M       ENL AIR FORCE
VALUE LABEL FOR     BRANCH                    N       OFF MARINES
VALUE LABEL FOR     BRANCH                    O       ENL MARINES
VALUE LABEL FOR     BRANCH                    P       OFF COAST GUARD
VALUE LABEL FOR     BRANCH                    S       OFF FOREIGN
VALUE LABEL FOR     BRANCH                    T       ENL FOREIGN
VALUE LABEL FOR     BRANCH                    U       CIVILIAN
VALUE LABEL FOR     BRANCH                    V       OFF NATL GUARD
VALUE LABEL FOR     BRANCH                    W       ENL NATL GUARD
VARIABLE LABEL FOR CAPACITY                           CLASS CAPACITY
VARIABLE LABEL FOR AVEOFFIN                           AVERAGE NO. OFFICERS IN CLASS
VARIABLE LABEL FOR AVEENLIN                    AVERAGE NO. ENLISTED IN CLASS
VARIABLE LABEL FOR VRBONUS                     REENLISTMENT BONUS TYPE
VARIABLE LABEL FOR TYPEENL                     TYPE OF ENLISTMENT
VARIABLE LABEL FOR NMBRENL                     NO. YEARS CURRENT ENLISTMENT
VALUE LABEL FOR    NMBRENL              0.0    NA
VALUE LABEL FOR    NMBRENL              1.0    MINORITY ENL
VALUE LABEL FOR    NMBRENL              2.0    TWO YR ENL
VALUE LABEL FOR    NMBRENL              3.0    THREE YR ENL
VALUE LABEL FOR    NMBRENL              4.0    FOUR YR ENL
VALUE LABEL FOR    NMBRENL              5.0    FIVE YR ENL
VALUE LABEL FOR    NMBRENL              6.0    SIX YR ENL
VALUE LABEL FOR    NMBRENL              7.0    USNR ONE YR ENL
VARIABLE LABEL FOR CAREER                      CAREER INTENT
VALUE LABEL FOR    CAREER               1.0    DISCH EAOS
VALUE LABEL FOR    CAREER               2.0    RES-RET EAOS
VALUE LABEL FOR    CAREER               3.0    UNCERTAIN
VALUE LABEL FOR    CAREER               4.0    REENL AT EAOS
VALUE LABEL FOR    CAREER               5.0    EXTEND AT EAOS
VALUE LABEL FOR    CAREER               6.0    EXT PRES DUTY
VARIABLE LABEL FOR NMBRSCOL                    NO. FORMAL SERVICE SCHOOLS ATTENDED
```

```
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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   SCHOOL

VALUE LABEL                                VALUE   ABSOLUTE     RELATIVE     ADJUSTED    CUMULATIVE
                                                  FREQUENCY    FREQUENCY    FREQUENCY    ADJ FREQ
                                                               (PERCENT)    (PERCENT)    (PERCENT)
                                          - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ACER                                         B        530         14.1         14.1         14.1
ELEC                                         C         34          0.9          0.9         15.0
DC-FF                                        D        161          4.3          4.3         19.3
IT-AD                                        F       1403         37.3         37.3         56.5
S-DA                                         G        801         21.3         21.3         77.8
ET                                           H        189          5.0          5.0         82.8
COMM                                         J        185          4.9          4.9         87.7
TTM                                          K        230          6.1          6.1         93.8
NAV                                          M        165          4.4          4.4         98.2
ASW-EW                                       N         68          1.8          1.8        100.0
                                                   -------      -------      -------      -------
                                           TOTAL     3766        100.0        100.0        100.0
```

```
VARIABLE   SCHOOL

   CODE
          I
   B      *************************** (   530)  14.1 PCT
          I    ACER
          I
          I
   C      *** (    34)   0.9 PCT
          I    ELEC
          I
          I
   D      ********* (   161)   4.3 PCT
          I    DC-FF
          I
          I
   F      ********************************************************************** (  1403)  37.3 PCT
          I    IT-AD
          I
          I
   G      **************************************** (   801)  21.3 PCT
          I    S-DA
          I
          I
   H      ********** (   189)   5.0 PCT
          I    ET
          I
          I
   J      ********** (   185)   4.9 PCT
          I    COMM
          I
          I
   K      ************* (   230)   6.1 PCT
          I    TTM
          I
          I
   M      ********* (   165)   4.4 PCT
          I    NAV
          I
          I
   N      **** (    68)   1.8 PCT
          I    ASW-EW
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        200       400       600       800       1000      1200      1400      1600      1800      2000
          FREQUENCY

VALID   OBSERVATIONS -        3766
MISSING OBSERVATIONS -           0
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE    COURSE

VALUE LABEL                        VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                          FREQUENCY   FREQUENCY   FREQUENCY    ADJ FREQ
                                                      (PERCENT)   (PERCENT)   (PERCENT)
                                  - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                    42.        51         1.4         1.4         1.4
                                    62.       210         5.6         5.6         6.9
                                   302.       679        18.0        18.0        25.0
                                   312.        81         2.2         2.2        27.1
                                   342.       244         6.5         6.5        33.6
                                   362.        20         0.5         0.5        34.2
                                   382.       116         3.1         3.1        37.3
                                   462.       120         3.2         3.2        40.4
                                  4202.       160         4.2         4.2        44.7
                                  4522.       272         7.2         7.2        51.9
                                  4552.       258         6.9         6.9        58.8
                                  5012.        32         0.8         0.8        59.6
                                  5682.        36         1.0         1.0        60.6
                                  6042.        27         0.7         0.7        61.3
                                  6092.         8         0.2         0.2        61.5
                                  6222.       130         3.5         3.5        64.9
                                  6512.        28         0.7         0.7        65.7
                                  6522.        40         1.1         1.1        66.8
                                  6532.        75         2.0         2.0        68.7
                                  6542.        86         2.3         2.3        71.0
                                  6552.        97         2.6         2.6        73.6
                                  6562.       103         2.7         2.7        76.3
                                  6602.       252         6.7         6.7        83.0
                                  7042.        20         0.5         0.5        83.6
                                  7052.        19         0.5         0.5        84.1
                                  7062.        23         0.6         0.6        84.7
                                  7072.         5         0.1         0.1        84.8
                                  7082.        33         0.9         0.9        85.7
                                  7092.         7         0.2         0.2        85.9
                                  7102.         6         0.2         0.2        86.0
                                  7122.         6         0.2         0.2        86.2
                                  7142.        11         0.3         0.3        86.5
                                  7152.        51         1.4         1.4        87.8
                                  7182.         8         0.2         0.2        88.1
                                  7512.        15         0.4         0.4        88.4
                                  7522.        11         0.3         0.3        88.7
                                  7532.         9         0.2         0.2        89.0
                                  8092.       159         4.2         4.2        93.2
                                  8102.        29         0.8         0.8        94.0
                                  8112.        42         1.1         1.1        95.1
                                  8272.        91         2.4         2.4        97.5
                                  8512.        94         2.5         2.5       100.0
                                          -------     -------     -------     -------
                                  TOTAL      3764       100.0       100.0       100.0
```

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FLETRAC,N NORVA - STUDENT STATISTICS - FTC LEVEL
FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA
VARIABLE   COURSE
      CODE
            I
     42.    ****** (     51)   1.4 PCT
            I
            I
            I
     62.    *********************** (    210)   5.6 PCT
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            I
            I
    102.    ********************************************************************** (    679)  18.0 PCT
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            I
            I
    312.    ********* (     81)   2.2 PCT
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            I
            I
    342.    *************************** (    246)   6.5 PCT
            I
            I
            I
    362.    *** (     20)   0.5 PCT
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            I
            I
    382.    ************* (    116)   3.1 PCT
            I
            I
            I
    462.    ************* (    120)   3.2 PCT
            I
            I
            I
   4202.    ***************** (    160)   4.2 PCT
            I
            I
            I
   4522.    ****************************** (    272)   7.2 PCT
            I
            I
            I
   4552.    ***************************** (    258)   6.9 PCT
            I
            I
            I
   5012.    **** (     32)   0.8 PCT
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            I
            I
   5682.    ***** (     38)   1.0 PCT
            I
            I
            I
   6042.    **** (     27)   0.7 PCT
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            I
            I
   6052.    ** (      8)   0.2 PCT
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            I
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   6912.    **** (     28)   0.7 PCT
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            I
   6522.    ***** (     40)   1.1 PCT
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            I
            I
   6532.    ********* (     75)   2.0 PCT
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            I
            I
   6542.    ********** (     86)   2.3 PCT
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            I
            I
   6552.    *********** (     97)   2.6 PCT
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            I
            I
   6562.    ************ (    103)   2.7 PCT
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   6602.    **************************** (    292)   7.7 PCT
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   7042.    *** (     20)   0.5 PCT
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            I
   7052.    *** (     19)   0.5 PCT
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            I
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FLETRACEN NUMVA - STUDENT STATISTICS - FTC LEVEL

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    7082.  **** (     33)   0.9 PCT
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    7092.  ** (      7)   0.2 PCT
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    7102.  ** (      6)   0.2 PCT
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    7122.  ** (      6)   0.2 PCT
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    7142.  ** (     11)   0.3 PCT
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           I
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    7152.  ****** (     51)   1.4 PCT
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           I
    7182.  ** (      8)   0.2 PCT
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           I
           I
    7512.  *** (     15)   0.4 PCT
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    7522.  ** (     11)   0.3 PCT
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           I
    7532.  ** (      9)   0.2 PCT
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           I
           I
    8092.  **************** (    159)   4.2 PCT
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    8102.  **** (     29)   0.8 PCT
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           I
           I
    8272.  ********** (     91)   2.4 PCT
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           I
           I
    8512.  ********** (     94)   2.5 PCT
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           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        100       200       300       400       500       600       700       800       900      1000
           FREQUENCY

STATISTICS..

MEAN           3821.031             STD ERROR       50.492              MEDIAN       4490.676
MODE            302.000             STD DEV       3098.570              VARIANCE     **********
KURTOSIS         -1.645             SKEWNESS        -0.058              RANGE        8470.000
MINIMUM          42.000             MAXIMUM       8512.000

VALID   OBSERVATIONS -       3766
MISSING OBSERVATIONS -          0
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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE STUDCHAR (CREATION DATE = 08/22/74) ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE CONVENE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)	CUMULATIVE ADJ FREQ (PERCENT)
	31105.	13	0.3	0.3	0.3
	31112.	17	0.5	0.5	0.8
	31126.	11	0.3	0.3	1.1
	31210.	49	1.3	1.3	2.4
	40104.	1	0.0	0.0	2.4
	40107.	315	8.4	8.4	10.8
	40109.	14	0.4	0.4	11.2
	40114.	89	2.4	2.4	13.5
	40121.	149	4.0	4.0	17.5
	40128.	97	2.6	2.6	20.0
	40204.	253	6.7	6.7	26.8
	40211.	121	3.2	3.2	30.0
	40213.	2	0.1	0.1	30.0
	40219.	153	4.1	4.1	34.1
	40220.	8	0.2	0.2	34.3
	40225.	84	2.2	2.2	36.5
	40304.	225	6.0	6.0	42.5
	40311.	114	3.0	3.0	45.5
	40318.	156	4.1	4.1	49.7
	40325.	92	2.4	2.4	52.1
	40401.	261	6.9	6.9	59.1
	40403.	11	0.3	0.3	59.3
	40408.	123	3.3	3.3	62.6
	40415.	126	3.3	3.3	66.0
	40422.	86	2.3	2.3	68.2
	40429.	163	4.3	4.3	72.6
	40503.	1	0.0	0.0	72.6
	40506.	121	3.2	3.2	75.8
	40513.	153	4.1	4.1	79.9
	40515.	4	0.1	0.1	80.0
	40520.	124	3.3	3.3	83.3
	40528.	104	2.8	2.8	86.0
	40603.	119	3.2	3.2	89.2
	40610.	147	3.9	3.9	93.1
	40612.	1	0.0	0.0	93.1
	40617.	96	2.5	2.5	95.7
	40619.	1	0.0	0.0	95.7
	40624.	157	4.2	4.2	99.9
	40626.	5	0.1	0.1	100.0
	TOTAL	3766	100.0	100.0	100.0

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE    CONVENE

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             I
   31112.    **** (    17)   0.5 PCT
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             I
   31126.    *** (    11)   0.3 PCT
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             I
   31210.    *********** (    49)   1.3 PCT
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             I
   40104.    * (     1)   0.0 PCT
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   40107.    **************************************************************** (   315)   8.4 PCT
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   40109.    **** (    14)   0.4 PCT
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   40114.    ******************* (    89)   2.4 PCT
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   40121.    ******************************* (   149)   4.0 PCT
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   40128.    ******************** (    97)   2.6 PCT
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   40204.    **************************************************** (   253)   6.7 PCT
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   40211.    ************************* (   121)   3.2 PCT
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   40213.    * (     2)   0.1 PCT
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   40220.    *** (     8)   0.2 PCT
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   40304.    ********************************************** (   225)   6.0 PCT
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   40311.    ************************ (   114)   3.0 PCT
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   40318.    ******************************** (   156)   4.1 PCT
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   40325.    ******************* (    92)   2.4 PCT
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   40403.    *** (    11)   0.3 PCT
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   40408.    ************************** (   123)   3.3 PCT
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   40415.    ************************** (   126)   3.3 PCT
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   40422.    ****************** (    86)   2.3 PCT
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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

           I
  40429.   ********************************* (   163)   4.3 PCT
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           I
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  40520.   ************************* (   124)   3.3 PCT
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  40617.   ******************** (    96)   2.5 PCT
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  40619.   * (     1)   0.0 PCT
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  40624.   ******************************** (   157)   4.2 PCT
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  40626.   ** (     5)   0.1 PCT
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           0        50       100       150       200       250       300       350       400       450       500
           FREQUENCY

STATISTICS..

MEAN         40132.277            STD ERROR      23.029             MEDIAN      40126.910

MODE         40107.000            STD DEV      1413.212             VARIANCE   **********

KURTOSIS        36.160            SKEWNESS       -6.131             RANGE        9521.000

MINIMUM      31105.000            MAXIMUM     40626.000

VALID   OBSERVATIONS -        3766
MISSING OBSERVATIONS -           0
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TAEG REPORT NO. 12-2

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   AGE

VALUE LABEL                          VALUE   ABSOLUTE     RELATIVE     ADJUSTED    CUMULATIVE
                                             FREQUENCY    FREQUENCY    FREQUENCY    ADJ FREQ
                                                          (PERCENT)    (PERCENT)    (PERCENT)
                                     - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

17-19                                  1.0      432         11.5         12.4         12.4
20                                     2.0      348          9.2         10.0         22.4
21                                     3.0      384         10.2         11.0         33.4
22-23                                  4.0      518         13.8         14.9         48.3
24-25                                  5.0      379         10.1         10.9         59.1
26-28                                  6.0      401         10.6         11.5         70.6
29-32                                  7.0      532         14.1         15.3         85.9
33-36                                  8.0      342          9.1          9.8         95.7
37-49                                  9.0      149          4.0          4.3        100.0
                                      72.0        0          0.0       MISSING       100.0
                                      73.0        8          0.2       MISSING       100.0
                                      74.0      273          7.2       MISSING       100.0
                                              -------      -------      -------      -------
                                     TOTAL     3766        100.0        100.0        100.0
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   AGE

   CODE
           I
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           I     17-19
           I
           I
    2.0    *********************************** (   348)   9.2 PCT
           I     20
           I
           I
    3.0    ************************************** (   384)  10.2 PCT
           I     21
           I
           I
    4.0    **************************************************** (   518)  13.8 PCT
           I     22-23
           I
           I
    5.0    ************************************** (   379)  10.1 PCT
           I     24-25
           I
           I
    6.0    **************************************** (   401)  10.6 PCT
           I     26-28
           I
           I
    7.0    ***************************************************** (   532)  14.1 PCT
           I     29-32
           I
           I
    8.0    ********************************** (   342)   9.1 PCT
           I     33-36
           I
           I
    9.0    *************** (   149)   4.0 PCT
           I     37-49
           I
           I
   72.0    * (     0)   0.0 PCT
(MISSING)  I
           I
           I
   73.0    ** (     8)   0.2 PCT
(MISSING)  I
           I
           I
   74.0    *************************** (   273)   7.2 PCT
(MISSING)  I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        100       200       300       400       500       600       700       800       900      1000
           FREQUENCY



STATISTICS..

MEAN              4.721          STD ERROR        0.040          MEDIAN           4.660
MODE              7.000          STD DEV          2.385          VARIANCE         5.688
KURTOSIS         -1.174          SKEWNESS        -0.012          RANGE            8.000
MINIMUM           1.000          MAXIMUM          9.000
VALID   OBSERVATIONS -        3485
MISSING OBSERVATIONS -         281
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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE STUDCHAR (CREATION DATE = 08/22/74) ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE SERVTIME NO. OF YEARS IN SERVICE

VALUE LABEL	VALUE	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (PERCENT)	ADJUSTED FREQUENCY (PERCENT)	CUMULATIVE ADJ FREQ (PERCENT)
	0.0	366	9.7	9.9	9.9
	1.0	584	15.5	15.8	25.7
	2.0	500	13.3	13.5	39.2
	3.0	232	6.2	6.3	45.5
	4.0	236	6.3	6.4	51.9
	5.0	196	5.2	5.3	57.2
	6.0	150	4.0	4.1	61.2
	7.0	101	2.7	2.7	64.0
	8.0	114	3.0	3.1	67.0
	9.0	106	2.8	2.9	69.9
	10.0	93	2.5	2.5	72.4
	11.0	109	2.9	2.9	75.4
	12.0	130	3.5	3.5	78.9
	13.0	123	3.3	3.3	82.2
	14.0	113	3.0	3.1	85.3
	15.0	145	3.9	3.9	89.2
	16.0	101	2.7	2.7	91.9
	17.0	123	3.3	3.3	95.3
	18.0	89	2.4	2.4	97.7
	19.0	33	0.9	0.9	98.6
	20.0	18	0.5	0.5	99.1
	21.0	10	0.3	0.3	99.3
	24.0	2	0.1	0.1	99.7
	25.0	3	0.1	0.1	99.8
	26.0	3	0.1	0.1	99.8
	27.0	1	0.0	0.0	99.9
	28.0	2	0.1	0.1	99.9
	29.0	2	0.1	0.1	100.0
	30.0	1	0.0	0.0	100.0
	72.0	0	0.0	MISSING	100.0
	73.0	56	1.5	MISSING	100.0
	74.0	15	0.4	MISSING	100.0
	TOTAL	3766	100.0	100.0	100.0

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL
FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA
VARIABLE   SERVTIME   NO. OF YEARS IN SERVICE
   CODE
          I
   0.0    **************************************** (   364)   9.7 PCT
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          I
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          I
   2.0    ******************************************************** (   500)  13.3 PCT
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   3.0    ************************** (   232)   6.2 PCT
          I
          I
   4.0    *************************** (   236)   6.3 PCT
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   5.0    *********************** (   196)   5.2 PCT
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          I
   6.0    ***************** (   150)   4.0 PCT
          I
          I
   7.0    ************ (   101)   2.7 PCT
          I
          I
   8.0    ************* (   114)   3.0 PCT
          I
          I
   9.0    ************* (   106)   2.8 PCT
          I
          I
  10.0    *********** (    95)   2.5 PCT
          I
          I
  11.0    ************* (   109)   2.9 PCT
          I
          I
  12.0    *************** (   130)   3.5 PCT
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          I
  13.0    ************** (   123)   3.3 PCT
          I
          I
  14.0    ************* (   113)   3.0 PCT
          I
          I
  15.0    ****************** (   145)   3.9 PCT
          I
          I
  16.0    ************ (   101)   2.7 PCT
          I
          I
  17.0    ************** (   123)   3.3 PCT
          I
          I
  18.0    *********** (    88)   2.4 PCT
          I
          I
  19.0    **** (    33)   0.9 PCT
          I
          I
  20.0    *** (    18)   0.5 PCT
          I
          I
  21.0    ** (    10)   0.3 PCT
          I
          I
  22.0    ** (     7)   0.2 PCT
          I
          I
  23.0    * (     4)   0.1 PCT
          I
          I
  24.0    * (     2)   0.1 PCT
          I
          I
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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

          I
    25.0  * (      3)   0.1 PCT
          I
          I
          I
    26.0  * (      3)   0.1 PCT
          I
          I
          I
    27.0  * (      1)   0.0 PCT
          I
          I
          I
    28.0  * (      2)   0.1 PCT
          I
          I
          I
    29.0  * (      2)   0.1 PCT
          I
          I
          I
    30.0  * (      1)   0.0 PCT
          I
          I
          I
    72.0  * (      0)   0.0 PCT
 (MISSING)  I
          I
          I
    73.0  ******* (     56)   1.5 PCT
 (MISSING)  I
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          I
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 (MISSING)  I
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          I
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          0        100       200       300       400       500       600       700       800       900      1000
          FREQUENCY

STATISTICS..

MEAN              6.454              STD ERROR        0.098              MEDIAN          4.210

MODE              1.000              STD DEV          5.970              VARIANCE       35.640

KURTOSIS         -0.467              SKEWNESS         0.806              RANGE          30.000

MINIMUM           0.0                MAXIMUM         30.000

VALID   OBSERVATIONS -       3695
MISSING OBSERVATIONS -         71
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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL                                          09/04/74        PAGE   11

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   RATE

VALUE LABEL                                        VALUE    ABSOLUTE     RELATIVE     ADJUSTED    CUMULATIVE
                                                           FREQUENCY    FREQUENCY    FREQUENCY     ADJ FREQ
                                                                        (PERCENT)    (PERCENT)     (PERCENT)
                                                  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                     1.0          74          2.0          2.0          2.0

                                                     2.0         311          8.3          8.3         10.2

                                                     3.0         636         16.9         16.9         27.1

                                                     4.0         655         17.4         17.4         44.5

                                                     5.0         763         20.3         20.3         64.8

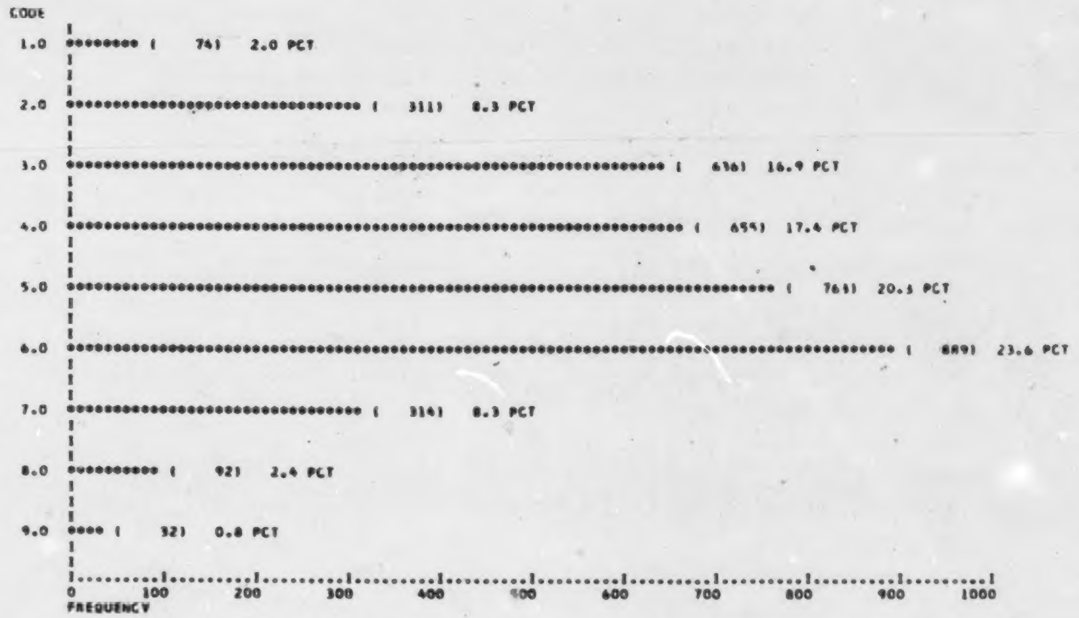
                                                     6.0         889         23.6         23.6         88.4

                                                     7.0         314          8.3          8.3         96.7

                                                     8.0          92          2.4          2.4         99.2

                                                     9.0          32          0.8          0.8        100.0
                                                             -------      -------      -------      -------
                                                   TOTAL        3766        100.0        100.0        100.0
```

```
VARIABLE   RATE
```



```
STATISTICS..

MEAN            4.672          STD ERROR      0.027          MEDIAN        4.771

MODE            6.000          STD DEV        1.651          VARIANCE      2.726

KURTOSIS       -0.535          SKEWNESS      -0.042          RANGE         8.000

MINIMUM         1.000          MAXIMUM        9.000

VALID   OBSERVATIONS -      3766
MISSING OBSERVATIONS -         0
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)    ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE    RATETIME   NO. OF YEARS IN RATE

VALUE LABEL                              VALUE    ABSOLUTE     RELATIVE     ADJUSTED    CUMULATIVE
                                                  FREQUENCY   FREQUENCY    FREQUENCY     ADJ FREQ
                                                              (PERCENT)    (PERCENT)     (PERCENT)
                                        - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                           0.0       1508        40.0         41.8          41.8
                                           1.0        676        18.0         18.7          60.5
                                           2.0        340         9.0          9.4          69.9
                                           3.0        320         8.5          8.9          78.8
                                           4.0        209         5.5          5.8          84.6
                                           5.0        204         5.4          5.7          90.2
                                           6.0        178         4.7          4.9          95.2
                                           7.0         85         2.3          2.4          97.5
                                           8.0         42         1.1          1.2          98.7
                                           9.0         13         0.3          0.4          99.1
                                          10.0         15         0.4          0.4          99.5
                                          11.0          6         0.2          0.2          99.6
                                          12.0         10         0.3          0.3          99.9
                                          13.0          3         0.1          0.1         100.0
                                          72.0          0         0.0      MISSING         100.0
                                          73.0          3         0.1      MISSING         100.0
                                          74.0        154         4.1      MISSING         100.0
                                                  -------     -------      -------       -------
                                         TOTAL       3766       100.0        100.0         100.0
```

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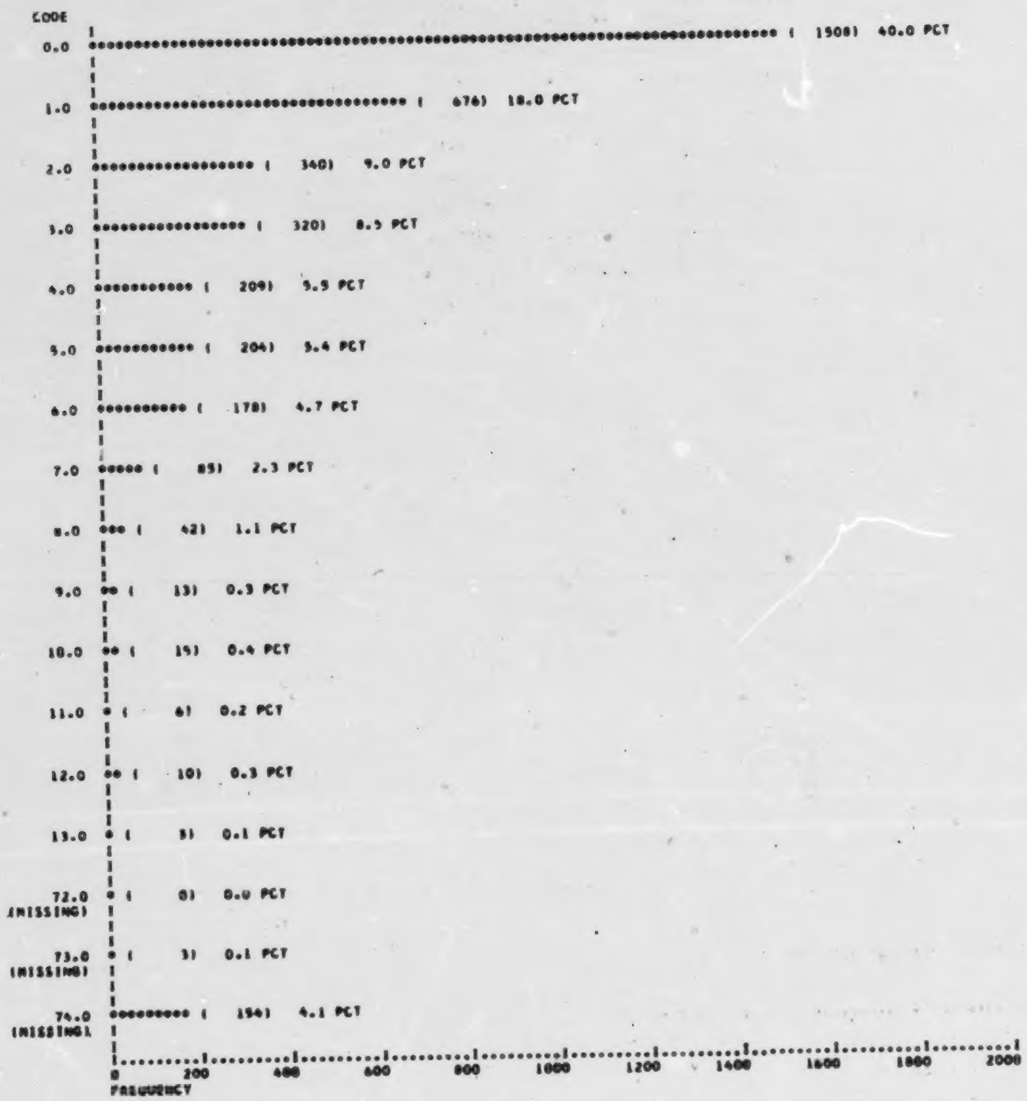
```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   RATETIME   NO. OF YEARS IN RATE
```



```
STATISTICS..

MEAN           1.846          STD ERROR      0.039          MEDIAN       0.939

MODE           0.0            STD DEV        2.328          VARIANCE     5.417

KURTOSIS       1.032          SKEWNESS       1.437          RANGE       13.000

MINIMUM        0.0            MAXIMUM       13.000

VALID   OBSERVATIONS -     3609
MISSING OBSERVATIONS -      197
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)    ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE    PAYGTIME    NO. OF YEARS IN PAYGRADE

VALUE LABEL                                          VALUE    ABSOLUTE     RELATIVE     ADJUSTED    CUMULATIVE
                                                             FREQUENCY    FREQUENCY    FREQUENCY    ADJ FREQ
                                                                          (PERCENT)    (PERCENT)    (PERCENT)
                                                  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                      0.0        1497         39.8         98.7         98.7

                                                      1.0          18          0.5          1.2         99.9

                                                      2.0           1          0.0          0.1        100.0

                                                     72.0           0          0.0      MISSING        100.0

                                                     73.0          64          1.7      MISSING        100.0

                                                     74.0        2186         58.0      MISSING        100.0
                                                              -------      -------      -------      -------
                                                    TOTAL        3766        100.0        100.0        100.0
```

```
VARIABLE    PAYGTIME    NO. OF YEARS IN PAYGRADE

      CODE
           I
      0.0  ****************************** (  1497)  39.8 PCT
           I
           I
           I
      1.0  * (    18)  0.5 PCT
           I
           I
           I
      2.0  * (     1)  0.0 PCT
           I
           I
           I
     72.0  * (     0)  0.0 PCT
 (MISSING) I
           I
           I
     73.0  ** (    64)  1.7 PCT
 (MISSING) I
           I
           I
     74.0  ******************************************** (  2186)  58.0 PCT
 (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        500      1000      1500      2000      2500      3000      3500      4000      4500      5000
           FREQUENCY

STATISTICS..

MEAN              0.013          STD ERROR      0.003               MEDIAN          0.0

MODE              0.0            STD DEV        0.120               VARIANCE        0.014

KURTOSIS        101.760          SKEWNESS       9.600               RANGE           2.000

MINIMUM           0.0            MAXIMUM        2.000

VALID   OBSERVATIONS -      1516
MISSING OBSERVATIONS -      2250
```

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```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   PRINEC      PRIMARY NEC EXISTS

VALUE LABEL                                          VALUE    ABSOLUTE     RELATIVE    ADJUSTED   CUMULATIVE
                                                              FREQUENCY    FREQUENCY   FREQUENCY   ADJ FREQ
                                                                           (PERCENT)   (PERCENT)   (PERCENT)
                                                     - - - - - - - - - - - - - - - - - - - - - - - - - - - -

NO NEC EXISTS                                          0.0       1083        28.8        28.8        28.8

NEC EXISTS                                             1.0       2683        71.2        71.2       100.0
                                                              -------     -------     -------     -------
                                                     TOTAL       3766       100.0       100.0       100.0
```

```
VARIABLE   PRINEC      PRIMARY NEC EXISTS

     CODE
            I
      0.0   **********************  (  1083)  28.8 PCT
            I    NO NEC EXISTS
            I
            I
      1.0   ******************************************************  (  2683)  71.2 PCT
            I    NEC EXISTS
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0        500      1000      1500      2000      2500      3000      3500      4000      4500      5000
            FREQUENCY

STATISTICS..

MEAN             0.712             STD ERROR      0.007              MEDIAN         0.0

MODE             1.000             STD DEV        0.453              VARIANCE       0.205

KURTOSIS        -1.119             SKEWNESS      -0.939              RANGE          1.000

MINIMUM          0.0               MAXIMUM        1.000

VALID   OBSERVATIONS -       3766
MISSING OBSERVATIONS -          0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   PNECTIME   NO. OF YEARS IN PRIMARY NEC

VALUE LABEL                           VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                              FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                          (PERCENT)   (PERCENT)   (PERCENT)
                                      - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                        0.0     1179        31.3        54.2        54.2
                                        1.0      470        12.5        21.6        75.9
                                        2.0      209         5.5         9.6        85.5
                                        3.0      149         4.0         6.9        92.3
                                        4.0       97         2.6         4.5        96.8
                                        5.0       62         1.6         2.9        99.6
                                        6.0        1         0.0         0.0        99.7
                                        8.0        1         0.0         0.0        99.7
                                       10.0        2         0.1         0.1        99.8
                                       11.0        1         0.0         0.0        99.9
                                       12.0        2         0.1         0.1       100.0
                                       17.0        1         0.0         0.0       100.0
                                       72.0        1         0.0     MISSING       100.0
                                       73.0       29         0.8     MISSING       100.0
                                       74.0     1562        41.5     MISSING       100.0
                                              -------     -------     -------     -------
                                      TOTAL     3766       100.0       100.0       100.0
```

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```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL
FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA
VARIABLE   PNECTIME   NO. OF YEARS IN PRIMARY NEC

     CODE
              I
      0.0     *********************************************************** (  1179)  31.3 PCT
              I
              I
              I
      1.0     ************************ (   470)  12.5 PCT
              I
              I
              I
      2.0     *********** (   209)   5.5 PCT
              I
              I
              I
      3.0     ******** (   149)   4.0 PCT
              I
              I
              I
      4.0     ****** (    97)   2.6 PCT
              I
              I
              I
      5.0     **** (    62)   1.6 PLT
              I
              I
              I
      6.0     * (     1)   0.0 PCT
              I
              I
              I
      8.0     * (     1)   0.0 PCT
              I
              I
              I
     10.0     * (     2)   0.1 PCT
              I
              I
              I
     11.0     * (     1)   0.0 PCT
              I
              I
              I
     12.0     * (     2)   0.1 PCT
              I
              I
              I
     17.0     * (     1)   0.0 PCT
              I
              I
              I
     72.0     * (     1)   0.0 PCT
  (MISSING)   I
              I
              I
     73.0     ** (    29)   0.8 PCT
  (MISSING)   I
              I
              I
     74.0     ******************************************************************************* (  1562)  41.5 PCT
  (MISSING)   I
              I
              I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
              0        200       400       600       800      1000      1200      1400      1600      1800      2000
              FREQUENCY

STATISTICS..

MEAN              0.975          STD ERROR        0.031          MEDIAN          0.0

MODE              0.0            STD DEV          1.468          VARIANCE        2.154

KURTOSIS         11.094          SKEWNESS         2.452          RANGE          17.000

MINIMUM           0.0            MAXIMUM         17.000

VALID   OBSERVATIONS -      2174
MISSING OBSERVATIONS -      1992
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   YRSEDUC     NO. YEARS OF FORMAL EDUCATION

VALUE LABEL                                  VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                     FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                 (PERCENT)   (PERCENT)   (PERCENT)
                                           ------------------------------------------------------

                                               7.0         9         0.2         0.2         0.2
                                               8.0        34         0.9         0.9         1.1
                                               9.0        90         2.4         2.4         3.5
                                              10.0       186         4.9         5.0         8.5
                                              11.0       181         4.8         4.8        13.3
                                              12.0      2771        73.6        73.8        87.2
                                              13.0       304         8.1         8.1        95.3
                                              14.0       124         3.3         3.3        98.6
                                              15.0        27         0.7         0.7        99.3
                                              16.0        23         0.6         0.6        99.9
                                              17.0         4         0.1         0.1       100.0
                                               0.0        13         0.3     MISSING       100.0
                                                     -------     -------     -------     -------
                                             TOTAL      3766       100.0       100.0       100.0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDLMAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   YRSEDUC    NO. YEARS OF FORMAL EDUCATION

      CODE
            I
       7.0  * (      9)   0.2 PCT
            I
            I
            I
       8.0  ** (    34)   0.9 PCT
            I
            I
            I
       9.0  *** (    90)   2.4 PCT
            I
            I
            I
      10.0  ***** (   186)   4.9 PCT
            I
            I
            I
      11.0  ***** (   181)   4.8 PCT
            I
            I
            I
      12.0  ******************************************************** (  2771)  73.6 PCT
            I
            I
            I
      13.0  ******* (   304)   8.1 PCT
            I
            I
            I
      14.0  *** (   124)   3.3 PCT
            I
            I
            I
      15.0  ** (    27)   0.7 PCT
            I
            I
            I
      16.0  * (    23)   0.6 PCT
            I
            I
            I
      17.0  * (     4)   0.1 PCT
            I
            I
            I
       0.0  * (    13)   0.3 PCT
  (MISSING) I
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0        500      1000      1500      2000      2500      3000      3500      4000      4500      5000
            FREQUENCY


STATISTICS..

MEAN          11.931           STD ERROR        0.017           MEDIAN        11.997
MODE          12.000           STD DEV          1.032           VARIANCE       1.065
KURTOSIS       5.688           SKEWNESS        -0.421           RANGE         10.000
MINIMUM        7.000           MAXIMUM         17.000

VALID   OBSERVATIONS -      3753
MISSING OBSERVATIONS -        13
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   DEGREE

VALUE LABEL                                    VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                       FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                   (PERCENT)   (PERCENT)   (PERCENT)
                                              - - - - - - - - - - - - - - - - - - - - - - - - - - -

NO DEGREE                                        1.      1812        48.1        48.1        48.1

HIGH SCHOOL                                      2.      1852        49.2        49.2        97.3

TWO YRS COL OR LESS                              3.        48         1.3         1.3        98.6

ASSOC DEGREE                                     4.        31         0.8         0.8        99.4

BACHELORS DEG                                    5.        23         0.6         0.6       100.0
                                                       -------     -------     -------     -------
                                               TOTAL     3766       100.0       100.0       100.0




VARIABLE   DEGREE

     CODE
          I
       1. ******************************************************************************************* (  1812)  48.1 PCT
          I    NO DEGREE
          I
          I
       2. ********************************************************************************************* (  1852)  49.2 PCT
          I    HIGH SCHOOL
          I
          I
       3. *** (    48)   1.3 PCT
          I    TWO YRS COL OR LESS
          I
          I
       4. *** (    31)   0.8 PCT
          I    ASSOC DEGREE
          I
          I
       5. ** (    23)   0.6 PCT
          I    BACHELORS DEG
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        200       400       600       800      1000      1200      1400      1600      1800      2000
          FREQUENCY

STATISTICS..

MEAN             1.566              STD ERROR       0.010              MEDIAN          1.538

MODE             2.000              STD DEV         0.628              VARIANCE        0.394

KURTOSIS         5.116              SKEWNESS        1.441              RANGE           4.000

MINIMUM          1.000              MAXIMUM         5.000

VALID   OBSERVATIONS -      3766
MISSING OBSERVATIONS -         0
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FLTTRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   TYPECOM    TYPE COMMAND

VALUE LABEL                            VALUE   ABSOLUTE    RELATIVE     ADJUSTED    CUMULATIVE
                                               FREQUENCY   FREQUENCY    FREQUENCY   ADJ FREQ
                                                           (PERCENT)    (PERCENT)   (PERCENT)
                                   - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

MARINES                                 0.         2          0.1          0.1          0.1

COMCRUDESLANT                           1.      1156         30.7         30.7         30.7

COMINEWARFOR                            2.         8          0.2          0.2         31.0

COMNAVAIRLANT                           3.       435         11.6         11.6         42.5

COMPHIBLANT                             4.       448         11.9         11.9         54.4

COMSERVLANT                             5.       378         10.0         10.0         64.4

COMSUBLANT                              6.       196          5.2          5.2         69.6

COMTRALANT                              7.       167          4.4          4.4         74.1

OTHER                                   9.       976         25.9         25.9        100.0
                                              -------      -------      -------      -------
                                     TOTAL      3766        100.0        100.0        100.0
```

```
FLTTRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74) . ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE    TYPECOM    TYPE COMMAND

     CODE
           I
      0.   * (     21)   0.1 PCT
           I    MARINES
           I
           I
      1.   ********************************************************** (  1156)  30.7 PCT
           I    COMCRUDESLANT
           I
           I
      2.   * (      8)   0.2 PCT
           I    COMINEWARFOR
           I
           I
      3.   ********************* (   415)  11.6 PCT
           I    COMNAVAIRLANT
           I
           I
      4.   ********************** (   448)  11.9 PCT
           I    COMPHIBLANT
           I
           I
      5.   ******************* (   378)  10.0 PCT
           I    COMSERVLANT
           I
           I
      6.   ********** (   196)   5.2 PCT
           I    COMSUBLANT
           I
           I
      8.   ******** (   167)   4.4 PCT
           I    COMTRALANT
           I
           I
      9.   ************************************************* (   976)  25.9 PCT
           I    OTHER
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        200       400       600       800       1000      1200      1400      1600      1800      2000
           FREQUENCY





STATISTICS..

MEAN             4.635          STD ERROR        0.052          MEDIAN           4.129

MODE             1.000          STD DEV          3.161          VARIANCE         9.992

KURTOSIS        -1.449          SKEWNESS         0.254          RANGE            9.000

MINIMUM          0.0            MAXIMUM          9.000

VALID   OBSERVATIONS -        3766
MISSING OBSERVATIONS -           0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS UF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   ABRDSHIP   ASSIGNED SHIP DUTY

VALUE LABEL                                   VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                      FREUUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                  (PERCENT)   (PERCENT)   (PERCENT)
                                              - - - - - - - - - - - - - - - - - - - - - - - - - - -

SHORE DUTY                                      0.0     1266        33.6        33.6        33.6

SHIP DUTY                                       1.0     2500        66.4        66.4       100.0
                                                      -------     -------     -------     -------
                                              TOTAL     3766       100.0       100.0       100.0
```

```
VARIABLE   ABRDSHIP   ASSIGNED SHIP DUTY

     CODE
          I
     0.0  ************************* (  1266)  33.6 PCT
          I    SHORE DUTY
          I
          I
     1.0  ************************************************** (  2500)  66.4 PCT
          I    SHIP DUTY
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        500      1000      1500      2000      2500      3000      3500      4000      4500      5000
          FREQUENCY

STATISTICS..

MEAN              0.664          STD ERROR        0.008                    MEDIAN           0.0

MODE              1.000          STD DEV          0.472                    VARIANCE         0.223

KURTOSIS         -1.519          SKEWNESS        -0.694                    RANGE            1.000

MINIMUM           0.0            MAXIMUM          1.000

VALID   OBSERVATIONS -       3766
MISSING OBSERVATIONS -          0
```

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FLETRACEN NORVA - STUDENT STATISTICS - RUN CODEBOOK

FILE    STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE    SHIPTYPE    SHIP TYPE ASSIGNED

VALUE LABEL                                        VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                           FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                       (PERCENT)   (PERCENT)   (PERCENT)
                                                  - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                             1266        33.6        33.6        33.6
                                                   AD          82         2.2         2.2        35.8
                                                   AE          33         0.9         0.9        36.7
                                                   AF          89         2.4         2.4        39.0
                                                   AFDM         1         0.0         0.0        39.1
                                                   AGDE        12         0.3         0.3        39.4
                                                   AGF         10         0.3         0.3        39.6
                                                   AH           7         0.2         0.2        39.8
                                                   AO          45         1.2         1.2        41.0
                                                   AOE         78         2.1         2.1        43.1
                                                   AOG          8         0.2         0.2        43.3
                                                   AOR         14         0.4         0.4        43.7
                                                   AR          25         0.7         0.7        44.3
                                                   ARS         15         0.4         0.4        44.7
                                                   AS          64         1.7         1.7        46.4
                                                   ASR         11         0.3         0.3        46.7
                                                   ATF         30         0.8         0.8        47.5
                                                   CA          47         1.2         1.2        48.8
                                                   CG          56         1.5         1.5        50.3
                                                   CLG          5         0.1         0.1        50.4
                                                   CV         109         2.9         2.9        53.3
                                                   CVA        160         4.2         4.2        57.5
                                                   CVAN        95         2.5         2.5        60.1
                                                   CVT          8         0.2         0.2        60.3
                                                   DD         298         7.9         7.9        68.2
                                                   DDG        122         3.2         3.2        71.4
                                                   DE         241         6.4         6.4        77.8
                                                   DEG         11         0.3         0.3        78.1
                                                   DLG        254         6.7         6.7        84.9
                                                   DLGN        30         0.8         0.8        85.7
                                                   LCC         25         0.7         0.7        86.3
                                                   LKA          9         0.2         0.2        86.6
                                                   LPA         31         0.8         0.8        87.4
                                                   LPD        117         3.1         3.1        90.5
                                                   LPH         73         1.9         1.9        92.4
                                                   LSD         65         1.7         1.7        94.2
                                                   LST         80         2.1         2.1        96.3
                                                   MSO          8         0.2         0.2        96.5
                                                   PG          10         0.3         0.3        96.8
                                                   SS           1         0.0         0.0        96.8
                                                   SSR          1         0.0         0.0        96.8
                                                   SSBN        52         1.4         1.4        98.2
                                                   SSN         67         1.8         1.8       100.0
                                                   WHE          1         0.0         0.0       100.0
                                                           -------     -------     -------     -------
                                                   TOTAL     3766       100.0       100.0       100.0
```

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FLETRACEN NORVA - STUDENT STATISTICS - RUN CODEBOOK
FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA
VARIABLE   SHIPTYPE   SHIP TYPE ASSIGNED
     CODE
          I
          ************************************************************************ (  1266)  33.6 PCT
          I
          I
          I
     AD   ***** (    82)   2.2 PCT
          I
          I
          I
     AE   *** (    33)   0.9 PCT
          I
          I
          I
     AF   ***** (    89)   2.4 PCT
          I
          I
          I
     AFDM * (     1)   0.0 PCT
          I
          I
          I
     AGDE ** (    12)   0.3 PCT
          I
          I
          I
     AGF  ** (    10)   0.3 PCT
          I
          I
          I
     AH   * (     7)   0.2 PCT
          I
          I
          I
     AO   *** (    45)   1.2 PCT
          I
          I
          I
     AOE  ***** (    78)   2.1 PCT
          I
          I
          I
     AOG  * (     8)   0.2 PCT
          I
          I
          I
     AOR  ** (    14)   0.4 PCT
          I
          I
          I
     AR   ** (    25)   0.7 PCT
          I
          I
          I
     ARS  ** (    15)   0.4 PCT
          I
          I
          I
     AS   **** (    64)   1.7 PCT
          I
          I
          I
     ASR  ** (    11)   0.3 PCT
          I
          I
          I
     ATF  *** (    30)   0.8 PCT
          I
          I
          I
     CA   *** (    47)   1.2 PCT
          I
          I
          I
     CG   **** (    56)   1.5 PCT
          I
          I
          I
     CLG  * (     5)   0.1 PCT
          I
          I
          I
     CV   ****** (   109)   2.9 PCT
          I
          I
          I
     CVA  ********* (   160)   4.2 PCT
          I
          I
          I
     CVAN ****** (    95)   2.5 PCT
          I
          I
          I
     CVT  * (     8)   0.2 PCT
          I
          I
          I
     UD   ***************** (   298)   7.9 PCT
          I
          I
```

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FLETRACEN NORVA - STUDENT STATISTICS - RUN CODEBOOK

         I
 DDG     ******* (   122)   3.2 PCT
         I
         I
         I
 DE      ************** (   241)   6.4 PCT
         I
         I
         I
 DEG     ** (    11)   0.3 PCT
         I
         I
         I
 DLG     *************** (   254)   6.7 PCT
         I
         I
         I
 DLGN    *** (    30)   0.8 PCT
         I
         I
         I
 LCC     ** (    25)   0.7 PCT
         I
         I
         I
 LKA     * (     9)   0.2 PCT
         I
         I
         I
 LPA     *** (    31)   0.8 PCT
         I
         I
         I
 LPD     ******* (   117)   3.1 PCT
         I
         I
         I
 LPH     ***** (    73)   1.9 PCT
         I
         I
         I
 LSD     **** (    65)   1.7 PCT
         I
         I
         I
 LST     ***** (    80)   2.1 PCT
         I
         I
         I
 MSO     * (     8)   0.2 PCT
         I
         I
         I
 PG      ** (    10)   0.3 PCT
         I
         I
         I
 SS      * (     1)   0.0 PCT
         I
         I
         I
 SSB     * (     1)   0.0 PCT
         I
         I
         I
 SSBN    **** (    52)   1.4 PCT
         I
         I
         I
 SSN     **** (    67)   1.8 PCT
         I
         I
         I
 WHE     * (     1)   0.0 PCT
         I
         I
         I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
         0        200       400       600       800      1000      1200      1400      1600      1800      2000
         FREQUENCY

VALID   OBSERVATIONS -        3766
MISSING OBSERVATIONS -           0
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   GCT          RECODED INTO 3-STEP INTERVALS

VALUE LABEL                              VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                 FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                             (PERCENT)   (PERCENT)   (PERCENT)
                                         - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                          23.0       11         0.3         0.3         0.3

                                          26.0        5         0.1         0.1         0.5

                                          29.0       23         0.6         0.7         1.2

                                          32.0       43         1.1         1.3         2.4

                                          35.0       76         2.0         2.3         4.7

                                          38.0       99         2.6         2.9         7.6

                                          41.0      159         4.2         4.7        12.4

                                          44.0      234         6.2         7.0        19.3

                                          47.0      317         8.4         9.4        28.8

                                          50.0      332         8.8         9.9        38.6

                                          53.0      314         8.3         9.3        48.0

                                          56.0      404        10.7        12.0        60.0

                                          59.0      420        11.2        12.5        72.5

                                          62.0      391        10.4        11.6        84.1

                                          65.0      279         7.4         8.3        92.4

                                          68.0      135         3.6         4.0        96.4

                                          71.0       84         2.2         2.5        98.9

                                          74.0       37         1.0         1.1       100.0

                                           0.0      403        10.7     MISSING       100.0
                                                 -------     -------     -------     -------
                                         TOTAL     3766       100.0       100.0       100.0
```

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TAEG REPORT NO. 12-2

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   GCT        RECODED INTO 3-STEP INTERVALS

   CODE
          I
   23.0   *** (    11)   0.3 PCT
          I
          I
          I
   26.0   ** (     5)   0.1 PCT
          I
          I
          I
   29.0   ****** (    23)   0.6 PCT
          I
          I
          I
   32.0   ********** (    43)   1.1 PCT
          I
          I
          I
   35.0   **************** (    76)   2.0 PCT
          I
          I
          I
   38.0   ******************** (    99)   2.6 PCT
          I
          I
          I
   41.0   ******************************** (   159)   4.2 PCT
          I
          I
          I
   44.0   *********************************************** (   234)   6.2 PCT
          I
          I
          I
   47.0   **************************************************************** (   317)   8.4 PCT
          I
          I
          I
   50.0   ******************************************************************* (   332)   8.8 PCT
          I
          I
          I
   53.0   *************************************************************** (   314)   8.3 PCT
          I
          I
          I
   56.0   ********************************************************************************** (   406)  10.7 PCT
          I
          I
          I
   59.0   ************************************************************************************ (   420)  11.2 PCT
          I
          I
          I
   62.0   ******************************************************************************* (   391)  10.4 PCT
          I
          I
          I
   65.0   ******************************************************** (   279)   7.4 PCT
          I
          I
          I
   68.0   *************************** (   135)   3.6 PCT
          I
          I
          I
   71.0   ***************** (    84)   2.2 PCT
          I
          I
          I
   74.0   ******** (    37)   1.0 PCT
          I
          I
          I
    0.0   ********************************************************************************* (   403)  10.7 PCT
(MISSING) I
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        50        100       150       200       250       300       350       400       450       500
          FREQUENCY

STATISTICS..

MEAN          53.960        STD ERROR      0.166        MEDIAN        55.009

MODE          59.000        STD DEV        9.607        VARIANCE      92.302

KURTOSIS      -0.181        SKEWNESS      -0.387        RANGE         51.000

MINIMUM       23.000        MAXIMUM       74.000

VALID   OBSERVATIONS -       3363
MISSING OBSERVATIONS -        403
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDLHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   ARI          RECODED INTO 3-STEP INTERVALS

VALUE LABEL                                   VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                      FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                  (PERCENT)   (PERCENT)   (PERCENT)
                                              - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                               26.0        2         0.1         0.1         0.1

                                               29.0        7         0.2         0.2         0.3

                                               32.0       17         0.5         0.5         0.8

                                               35.0       51         1.4         1.5         2.3

                                               38.0      178         4.7         5.3         7.6

                                               41.0      203         5.4         6.0        13.6

                                               44.0      268         7.1         8.0        21.6

                                               47.0      358         9.5        10.6        32.2

                                               50.0      414        11.0        12.3        44.5

                                               53.0      407        10.8        12.1        56.6

                                               56.0      356         9.5        10.6        67.2

                                               59.0      424        11.3        12.6        79.8

                                               62.0      206         5.5         6.1        86.0

                                               65.0      336         8.9        10.0        96.0

                                               68.0      116         3.1         3.4        99.4

                                               71.0       12         0.3         0.4        99.8

                                               74.0        6         0.2         0.2        99.9

                                               77.0        2         0.1         0.1       100.0

                                                0.0      403        10.7      MISSING      100.0
                                                       -------     -------     -------     -------
                                              TOTAL     3766       100.0       100.0       100.0
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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   ARI        RECODED INTO 3-STEP INTERVALS

     CODE
           I
     26.0  * (     2)   0.1 PCT
           I
           I
           I
     29.0  ** (     7)   0.2 PCT
           I
           I
           I
     32.0  **** (    17)   0.5 PCT
           I
           I
           I
     35.0  *********** (    51)   1.4 PCT
           I
           I
           I
     38.0  ************************************ (   178)   4.7 PCT
           I
           I
           I
     41.0  ***************************************** (   203)   5.4 PCT
           I
           I
           I
     44.0  ****************************************************** (   268)   7.1 PCT
           I
           I
           I
     47.0  ************************************************************************ (   358)   9.5 PCT
           I
           I
           I
     50.0  *********************************************************************************** (   414)  11.0 PCT
           I
           I
           I
     53.0  ********************************************************************************** (   407)  10.8 PCT
           I
           I
           I
     56.0  ************************************************************************ (   356)   9.5 PCT
           I
           I
           I
     59.0  ************************************************************************************* (   424)  11.3 PCT
           I
           I
           I
     62.0  ****************************************** (   206)   5.5 PCT
           I
           I
           I
     65.0  ******************************************************************** (   336)   8.9 PCT
           I
           I
           I
     68.0  ************************ (   116)   3.1 PCT
           I
           I
           I
     71.0  *** (    12)   0.3 PCT
           I
           I
           I
     74.0  ** (     6)   0.2 PCT
           I
           I
           I
     77.0  * (     2)   0.1 PCT
           I
           I
           I
      0.0  ********************************************************************************* (   403)  10.7 PCT
 (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        50       100       150       200       250       300       350       400       450       500
           FREQUENCY

STATISTICS..

MEAN             52.769           STD ERROR        0.150               MEDIAN           52.853

MODE             59.000           STD DEV          8.696               VARIANCE         75.628

KURTOSIS         -0.642           SKEWNESS        -0.125               RANGE            51.000

MINIMUM          26.000           MAXIMUM         77.000

VALID   OBSERVATIONS -      3363
MISSING OBSERVATIONS -       403
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   MECH        RECODED INTO 3-STEP INTERVALS

VALUE LABEL                               VALUE    ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                  FREQUENCY   FREQUENCY   FREQUENCY    ADJ FREQ
                                                              (PERCENT)   (PERCENT)   (PERCENT)
                                          - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                           23.0          2         0.1         0.1         0.1
                                           26.0          2         0.1         0.1         0.1
                                           29.0         12         0.3         0.4         0.5
                                           32.0         51         1.4         1.5         2.0
                                           35.0        101         2.7         3.0         5.0
                                           38.0        156         4.1         4.6         9.6
                                           41.0        262         7.0         7.8        17.4
                                           44.0        281         7.5         8.4        25.8
                                           47.0        533        14.2        15.8        41.6
                                           50.0        420        11.2        12.5        54.1
                                           53.0        432        11.5        12.8        67.0
                                           56.0        355         9.4        10.6        77.5
                                           59.0        297         7.9         8.8        86.4
                                           62.0        213         5.7         6.3        92.7
                                           65.0        155         4.1         4.6        97.3
                                           68.0         71         1.9         2.1        99.4
                                           71.0         19         0.5         0.6       100.0
                                           74.0          1         0.0         0.0       100.0
                                            0.0        403        10.7     MISSING       100.0
                                                   -------     -------     -------     -------
                                          TOTAL       3766       100.0       100.0       100.0
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL
FILE    STUDCHAR (CREATION DATE = 08/22/74)    ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA
VARIABLE   MECH        RECODED INTO 3-STEP INTERVALS

    CODE
           I
    23.0   * (     2)  0.1 PCT
           I
           I
    26.0   * (     2)  0.1 PCT
           I
           I
    29.0   ** (   12)  0.3 PCT
           I
           I
    32.0   ****** (   51)  1.4 PCT
           I
           I
    35.0   *********** (  101)  2.7 PCT
           I
           I
    38.0   **************** (  156)  4.1 PCT
           I
           I
    41.0   *************************** (  262)  7.0 PCT
           I
           I
    44.0   ***************************** (  281)  7.5 PCT
           I
           I
    47.0   ****************************************************** (  533)  14.2 PCT
           I
           I
    50.0   ****************************************** (  420)  11.2 PCT
           I
           I
    53.0   ******************************************** (  432)  11.5 PCT
           I
           I
    56.0   ************************************ (  355)  9.4 PCT
           I
           I
    59.0   ****************************** (  297)  7.9 PCT
           I
           I
    62.0   ********************** (  213)  5.7 PCT
           I
           I
    65.0   **************** (  155)  4.1 PCT
           I
           I
    68.0   ******** (   71)  1.9 PCT
           I
           I
    71.0   *** (   19)  0.5 PCT
           I
           I
    74.0   * (    1)  0.0 PCT
           I
           I
     0.0   ***************************************** (  403)  10.7 PCT
 (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        100       200       300       400       500       600       700       800       900      1000
           FREQUENCY

STATISTICS..

MEAN          50.707          STD ERROR      0.144                 MEDIAN        50.511
MODE          47.000          STD DEV        8.489                 VARIANCE      72.070
KURTOSIS      -0.374          SKEWNESS      -0.034                 RANGE         51.000
MINIMUM       23.000          MAXIMUM       74.000

VALID   OBSERVATIONS -      3363
MISSING OBSERVATIONS -       403
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE     STUDCHAR (CREATION DATE = 08/22/74)    ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE    CLER         RECODED INTO 3-STEP INTERVALS

VALUE LABEL                                  VALUE    ABSOLUTE     RELATIVE     ADJUSTED    CUMULATIVE
                                                      FREQUENCY    FREQUENCY    FREQUENCY    ADJ FREQ
                                                                   (PERCENT)    (PERCENT)    (PERCENT)
                                           - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                              26.0          1          0.0          0.0          0.0
                                              29.0         42          1.1          1.2          1.3
                                              32.0         42          1.1          1.2          2.5
                                              35.0         95          2.5          2.8          5.4
                                              38.0        185          4.9          5.5         10.9
                                              41.0        263          7.0          7.8         18.7
                                              44.0        321          8.5          9.5         28.2
                                              47.0        298          7.9          8.9         37.1
                                              50.0        424         11.3         12.6         49.7
                                              53.0        429         11.4         12.8         62.4
                                              56.0        415         11.0         12.3         74.8
                                              59.0        310          8.2          9.2         84.0
                                              62.0        238          6.3          7.0         91.0
                                              65.0        141          3.7          4.2         95.2
                                              68.0         82          2.2          2.4         97.7
                                              71.0         47          1.2          1.4         99.0
                                              74.0         24          0.6          0.7         99.8
                                              77.0          8          0.2          0.2        100.0
                                               0.0        403         10.7      MISSING        100.0
                                                      -------      -------      -------      -------
                                             TOTAL       3766        100.0        100.0        100.0
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   CLER        RECODED INTO 3-STEP INTERVALS

      CODE
           I
      26.0 * (     1)   0.0 PCT
           I
           I
           I
      29.0 ********* (    42)   1.1 PCT
           I
           I
           I
      32.0 ********* (    42)   1.1 PCT
           I
           I
           I
      35.0 ******************** (    95)   2.5 PCT
           I
           I
           I
      38.0 *************************************** (   185)   4.9 PCT
           I
           I
           I
      41.0 ******************************************************* (   263)   7.0 PCT
           I
           I
           I
      44.0 ****************************************************************** (   321)   8.5 PCT
           I
           I
           I
      47.0 ************************************************************** (   298)   7.9 PCT
           I
           I
           I
      50.0 **************************************************************************************** (   424)  11.3 PCT
           I
           I
           I
      53.0 **************************************************************************************** (   429)  11.4 PCT
           I
           I
           I
      56.0 ************************************************************************************* (   415)  11.0 PCT
           I
           I
           I
      59.0 **************************************************************** (   310)   8.2 PCT
           I
           I
           I
      62.0 ************************************************* (   236)   6.3 PCT
           I
           I
           I
      65.0 ****************************** (   141)   3.7 PCT
           I
           I
           I
      68.0 ****************** (    82)   2.2 PCT
           I
           I
           I
      71.0 ********** (    47)   1.2 PCT
           I
           I
           I
      74.0 ****** (    24)   0.6 PCT
           I
           I
           I
      77.0 *** (     8)   0.2 PCT
           I
           I
           I
       0.0 ********************************************************************************** (   403)  10.7 PCT
 (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        50       100       150       200       250       300       350       400       450       500
           FREQUENCY

STATISTICS..

MEAN          51.271            STD ERROR      0.159              MEDIAN        51.579
MODE          53.000            STD DEV        9.246              VARIANCE      85.489
KURTOSIS      -0.315            SKEWNESS      -0.018              RANGE         51.000
MINIMUM       24.000            MAXIMUM       77.000

VALID   OBSERVATIONS -      3363
MISSING OBSERVATIONS -       403
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/23/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   SHOP       RECODED INTO 3-STEP INTERVALS

VALUE LABEL                                VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                   FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                               (PERCENT)   (PERCENT)   (PERCENT)
                                         - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                            29.0        6          0.2         0.3         0.3

                                            32.0       14          0.4         0.7         1.0

                                            35.0       65          1.7         3.2         4.2

                                            38.0       53          1.4         2.6         6.7

                                            41.0      191          5.1         9.3        16.1

                                            44.0      125          3.3         6.1        22.2

                                            47.0      262          7.0        12.8        35.0

                                            50.0      276          7.3        13.5        48.5

                                            53.0      281          7.5        13.7        62.2

                                            56.0      212          5.6        10.4        72.5

                                            59.0      207          5.5        10.1        82.7

                                            62.0      191          5.1         9.3        92.0

                                            65.0      114          3.0         5.6        97.6

                                            68.0       38          1.0         1.9        99.4

                                            71.0        8          0.2         0.4        99.8

                                            74.0        3          0.1         0.1       100.0

                                            77.0        1          0.0         0.0       100.0

                                             0.0     1719         45.6      MISSING      100.0
                                                   -------     -------     -------     -------
                                           TOTAL     3766        100.0       100.0       100.0
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   SHOP        RECODED INTO 3-STEP INTERVALS

      CODE
           I
     29.0  * (     6)   0.2 PCT
           I
           I
           I
     32.0  ** (    14)   0.4 PCT
           I
           I
           I
     35.0  **** (    65)   1.7 PCT
           I
           I
           I
     38.0  **** (    53)   1.4 PCT
           I
           I
           I
     41.0  ********** (   191)   5.1 PCT
           I
           I
           I
     44.0  ******* (   125)   3.3 PCT
           I
           I
           I
     47.0  ************* (   262)   7.0 PCT
           I
           I
           I
     50.0  ************** (   276)   7.3 PCT
           I
           I
           I
     53.0  ************** (   281)   7.5 PCT
           I
           I
           I
     56.0  *********** (   212)   5.6 PCT
           I
           I
           I
     59.0  ********** (   207)   5.5 PCT
           I
           I
           I
     62.0  ********** (   191)   5.1 PCT
           I
           I
           I
     65.0  ****** (   114)   3.0 PCT
           I
           I
           I
     68.0  *** (    38)   1.0 PCT
           I
           I
           I
     71.0  * (     8)   0.2 PCT
           I
           I
           I
     74.0  * (     3)   0.1 PCT
           I
           I
           I
     77.0  * (     1)   0.0 PCT
           I
           I
           I
      0.0  **************************************************************************************** (  1719)  45.6 PCT
 (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        200       400       600       800      1000      1200      1400      1600      1800      2000
           FREQUENCY

STATISTICS..

MEAN          51.801          STD ERROR      0.185          MEDIAN        51.836

MODE          53.000          STD DEV        8.375          VARIANCE      70.141

KURTOSIS      -0.494          SKEWNESS      -0.112          RANGE         48.000

MINIMUM       29.000          MAXIMUM       77.000

VALID   OBSERVATIONS -       2047
MISSING OBSERVATIONS -       1719
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   TESTGRP    TEST GROUP

VALUE LABEL                                   VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                      FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                  (PERCENT)   (PERCENT)   (PERCENT)
                                              - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                               1.0       256         6.8         7.6         7.6

                                               2.0      1494        39.7        44.4        52.0

                                               3.0      1264        33.6        37.6        89.6

                                               4.0       329         8.7         9.8        99.4

                                               5.0        20         0.5         0.6       100.0

                                               0.0       403        10.7      MISSING      100.0
                                                      -------     -------     -------     -------
                                              TOTAL     3766       100.0       100.0       100.0
```

```
VARIABLE   TESTGRP    TEST GROUP

   CODE
          I
    1.0   ************** (   256)   6.8 PCT
          I
          I
          I
    2.0   *************************************************************************** (  1494)  39.7 PCT
          I
          I
          I
    3.0   *************************************************************** (  1264)  33.6 PCT
          I
          I
          I
    4.0   **************** (   329)   8.7 PCT
          I
          I
          I
    5.0   ** (    20)   0.5 PCT
          I
          I
          I
    0.0   ********************* (   403)  10.7 PCT
(MISSING) I
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        200       400       600       800       1000      1200      1400      1600      1800      2000
          FREQUENCY

STATISTICS..

MEAN            2.513          STD ERROR       0.014          MEDIAN          2.454

MODE            2.000          STD DEV         0.796          VARIANCE        0.634

KURTOSIS       -0.117          SKEWNESS        0.263          RANGE           4.000

MINIMUM         1.000          MAXIMUM         5.000

VALID   OBSERVATIONS -        3363
MISSING OBSERVATIONS -         403
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   AFUT        RECODED INTO 3-STEP INTERVALS

VALUE LABEL                       VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                          FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                      (PERCENT)   (PERCENT)   (PERCENT)
                                  - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                   11.0        10        0.3         0.5         0.5
                                   14.0        18        0.5         0.9         1.4
                                   17.0        32        0.8         1.6         3.0
                           [illegible]         26        0.7         1.3         4.2
                                   23.0        32        0.8         1.6         5.8
                                   26.0        19        0.5         0.9         6.8
                                   29.0        26        0.7         1.3         8.0
                                   32.0       110        2.9         5.4        13.5
                                   35.0        55        1.5         2.7        16.2
                                   38.0        48        1.3         2.4        18.5
                                   41.0        74        2.0         3.6        22.2
                                   44.0        53        1.4         2.6        24.8
                                   47.0        79        2.1         3.9        28.7
                                   50.0       148        3.9         7.3        36.0
                                   53.0        76        2.0         3.7        39.7
                                   56.0        63        1.7         3.1        42.8
                                   59.0       101        2.7         5.0        47.8
                                   62.0       117        3.1         5.8        53.6
                                   65.0        87        2.3         4.3        57.9
                                   68.0        31        0.8         1.5        59.4
                                   71.0       112        3.0         5.5        64.9
                                   74.0        60        1.6         3.0        67.9
                                   77.0        70        1.9         3.4        71.3
                                   83.0        66        1.8         3.3        80.4
                                   86.0        99        2.6         4.9        85.3
                                   89.0       106        2.8         5.2        90.5
                                   92.0        90        2.4         4.4        94.9
                                   95.0        62        1.6         3.1        98.0
                                   98.0        41        1.1         2.0       100.0
                                    0.0      1737       46.1     MISSING       100.0
                                          -------    -------     -------     -------
                                  TOTAL      3766      100.0       100.0       100.0
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   AFQT        RECODED INTO 3-STEP INTERVALS

    CODE
          I
    11.0  ** (    10)   0.3 PCT
          I
          I
          I
    14.0  ** (    18)   0.5 PCT
          I
          I
          I
    17.0  *** (    32)   0.8 PCT
          I
          I
          I
    20.0  ** (    26)   0.7 PCT
          I
          I
          I
    23.0  *** (    32)   0.8 PCT
          I
          I
          I
    26.0  ** (    19)   0.5 PCT
          I
          I
          I
    29.0  ** (    26)   0.7 PCT
          I
          I
          I
    32.0  ******* (   110)   2.9 PCT
          I
          I
          I
    35.0  **** (    55)   1.5 PCT
          I
          I
          I
    38.0  *** (    48)   1.3 PCT
          I
          I
          I
    41.0  ***** (    74)   2.0 PCT
          I
          I
          I
    44.0  **** (    53)   1.4 PCT
          I
          I
          I
    47.0  ***** (    79)   2.1 PCT
          I
          I
          I
    50.0  ******** (   148)   3.9 PCT
          I
          I
          I
    53.0  ***** (    76)   2.0 PCT
          I
          I
          I
    56.0  **** (    63)   1.7 PCT
          I
          I
          I
    59.0  ****** (   101)   2.7 PCT
          I
          I
          I
    62.0  ******* (   117)   3.1 PCT
          I
          I
          I
    65.0  ***** (    87)   2.3 PCT
          I
          I
          I
    68.0  *** (    31)   0.8 PCT
          I
          I
          I
    71.0  ******* (   112)   3.0 PCT
          I
          I
          I
    74.0  **** (    60)   1.6 PCT
          I
          I
          I
    77.0  ***** (    70)   1.9 PCT
          I
          I
          I
    80.0  ******* (   118)   3.1 PCT
          I
          I
          I
    83.0  **** (    66)   1.8 PCT
          I
          I
```

```
FLITHALEN NORVA - STUDENT STATISTICS - FTL LEVEL

          I
   86.0   ****** (    99)   2.6 PCT
          I
          I
          I
   89.0   ****** (   106)   2.8 PCT
          I
          I
          I
   92.0   ****** (    90)   2.4 PCT
          I
          I
          I
   95.0   **** (    62)   1.6 PCT
          I
          I
          I
   98.0   *** (    41)   1.1 PCT
          I
          I
          I
    0.0   *************************************************************************************** (  1737)  46.1 PCT
(MISSING) I
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        200       400       600       800      1000      1200      1400      1600      1800      2000
          FREQUENCY

STATISTICS..

MEAN           61.373          STD ERROR        0.489          MEDIAN          61.641

MODE           50.000          STD DEV         22.012          VARIANCE       484.508

KURTOSIS       -0.906          SKEWNESS        -0.212          RANGE           87.000

MINIMUM        11.000          MAXIMUM         98.000

VALID   OBSERVATIONS -       2029
MISSING OBSERVATIONS -       1737
```

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FLTTRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   FT.1        RECODED INTO 3-STEP INTERVALS

VALUE LABEL                              VALUE   ABSOLUTE   RELATIVE    ADJUSTED    CUMULATIVE
                                                 FREQUENCY  FREQUENCY   FREQUENCY   ADJ FREQ
                                                            (PERCENT)   (PERCENT)   (PERCENT)
                                      - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                          23.0        5        0.1         0.2          0.2

                                          26.0        3        0.1         0.1          0.3

                                          29.0       18        0.5         0.7          1.0

                                          32.0       11        0.3         0.4          1.5

                                          35.0       67        1.8         2.7          4.2

                                          38.0       44        1.2         1.8          6.0

                                          41.0       69        1.8         2.8          8.8

                                          44.0      165        4.4         6.7         15.4

                                          47.0      113        3.0         4.6         20.0

                                          50.0      208        5.5         8.4         28.4

                                          53.0      313        8.3        12.6         41.0

                                          56.0      367        9.7        14.8         55.8

                                          59.0      281        7.5        11.3         67.2

                                          62.0      265        7.0        10.7         77.8

                                          65.0      254        6.7        10.3         88.1

                                          68.0      147        3.9         5.9         94.0

                                          71.0       73        1.9         2.9         97.0

                                          74.0       41        1.1         1.7         98.6

                                          77.0       34        0.9         1.4        100.0

                                           0.0     1288       34.2     MISSING        100.0
                                                 -------    -------    -------      -------
                                          TOTAL    3766      100.0       100.0        100.0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL
FILE    STUDCHAR (CREATION DATE = 08/22/74)    ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA
VARIABLE    ETST        RECODED INTO 3-STEP INTERVALS

      CODE
            I
      23.0  * (      5)   0.1 PCT
            I
            I
            I
      26.0  * (      3)   0.1 PCT
            I
            I
            I
      29.0  ** (     18)   0.5 PCT
            I
            I
            I
      32.0  ** (     11)   0.3 PCT
            I
            I
            I
      35.0  **** (     67)   1.8 PCT
            I
            I
            I
      38.0  *** (     44)   1.2 PCT
            I
            I
            I
      41.0  **** (     69)   1.8 PCT
            I
            I
            I
      44.0  ********* (    165)   4.4 PCT
            I
            I
            I
      47.0  ******* (    113)   3.0 PCT
            I
            I
            I
      50.0  *********** (    208)   5.5 PCT
            I
            I
            I
      53.0  ***************** (    313)   8.3 PCT
            I
            I
            I
      56.0  ******************* (    367)   9.7 PCT
            I
            I
            I
      59.0  *************** (    281)   7.5 PCT
            I
            I
            I
      62.0  ************** (    265)   7.0 PCT
            I
            I
            I
      65.0  ************** (    254)   6.7 PCT
            I
            I
            I
      68.0  ******** (    147)   3.9 PCT
            I
            I
            I
      71.0  ***** (     73)   1.9 PCT
            I
            I
            I
      74.0  *** (     41)   1.1 PCT
            I
            I
            I
      77.0  *** (     34)   0.9 PCT
            I
            I
            I
       0.0  ***************************************************************** (   1288)   34.2 PCT
  (MISSING) I
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0        200       400       600       800      1000      1200      1400      1600      1800      2000
            FREQUENCY

STATISTICS..

MEAN          55.441          STD ERROR       0.193          MEDIAN        56.323

MODE          56.000          STD DEV         9.607          VARIANCE      92.290

KURTOSIS       0.161          SKEWNESS       -0.404          RANGE         54.000

MINIMUM       23.000          MAXIMUM        77.000

VALID   OBSERVATIONS -       2478
MISSING OBSERVATIONS -       1288
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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   INSTDAYS   DAYS OF INSTRUCTION

VALUE LABEL                                VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                   FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                               (PERCENT)   (PERCENT)   (PERCENT)
                                           - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                             5.0     1064        28.3        28.3        28.3

                                            10.0      507        13.5        13.5        41.7

                                            12.0       19         0.5         0.5        42.2

                                            15.0      481        12.8        12.8        55.0

                                            18.0      157         4.2         4.2        59.2

                                            20.0      940        25.0        25.0        84.1

                                            25.0      122         3.2         3.2        87.4

                                            30.0       42         1.1         1.1        88.5

                                            35.0        6         0.2         0.2        88.6

                                            40.0      258         6.9         6.9        95.5

                                            45.0      159         4.2         4.2        99.7

                                            60.0       11         0.3         0.3       100.0

                                             0.0        0         0.0     MISSING       100.0
                                                  -------     -------     -------     -------
                                           TOTAL     3766       100.0       100.0       100.0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDMAR (CREATION DATE = 08/22/76)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE    INSTDAYS   DAYS OF INSTRUCTION

      CODE
             I
       5.0   ***************************************************** (  1066)  28.3 PCT
             I
             I
             I
      10.0   ************************* (   507)  13.5 PCT
             I
             I
             I
      12.0   ** (    19)   0.5 PCT
             I
             I
             I
      15.0   ************************ (   481)  12.8 PCT
             I
             I
             I
      18.0   ********* (   157)   4.2 PCT
             I
             I
             I
      20.0   *********************************************** (   940)  25.0 PCT
             I
             I
             I
      25.0   ******* (   122)   3.2 PCT
             I
             I
             I
      30.0   *** (    42)   1.1 PCT
             I
             I
             I
      35.0   * (     8)   0.2 PCT
             I
             I
             I
      40.0   ************** (   258)   6.9 PCT
             I
             I
             I
      45.0   ********* (   159)   4.2 PCT
             I
             I
             I
      60.0   ** (    11)   0.3 PCT
             I
             I
             I
       0.0   * (     0)   0.0 PCT
   (MISSING) I
             I
             I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
             0        200       400       600       800      1000      1200      1400      1600      1800      2000
             FREQUENCY

STATISTICS..

MEAN              16.493          STD ERROR       0.185          MEDIAN         15.327

MODE               5.000          STD DEV        11.367          VARIANCE      129.200

KURTOSIS           0.908          SKEWNESS        1.165          RANGE          55.000

MINIMUM            5.000          MAXIMUM        60.000

VALID   OBSERVATIONS -       3766
MISSING OBSERVATIONS -          0
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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   GRADE      RECODED INTO 5-STEP INTERVALS

VALUE LABEL                            VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                              FREQUENCY   FREQUENCY   FREQUENCY    ADJ FREQ
                                                          (PERCENT)   (PERCENT)   (PERCENT)
                                       - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                         2.5       1         0.0         0.0         0.0
                                        12.5       1         0.0         0.0         0.1
                                        17.5       2         0.1         0.1         0.2
                                        22.5       2         0.1         0.1         0.2
                                        27.5      17         0.5         0.7         0.9
                                        32.5       5         0.1         0.2         1.1
                                        37.5      11         0.3         0.4         1.6
                                        47.5      47         1.2         1.9         3.4
                                        52.5     244         6.5         9.7        13.1
                                        57.5      53         1.4         2.1        15.2
                                        62.5      66         1.8         2.6        17.9
                                        67.5     107         2.8         4.3        22.1
                                        72.5     153         4.1         6.1        28.2
                                        77.5     506        13.4        20.1        48.3
                                        82.5     426        11.3        16.9        65.2
                                        87.5     386        10.2        15.3        80.6
                                        92.5     320         8.5        12.7        93.3
                                        97.5     168         4.5         6.7       100.0
                                         0.0    1251        33.2      MISSING      100.0
                                              -------     -------     -------     -------
                                       TOTAL    3766       100.0       100.0       100.0
```

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FLTTRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/76)    ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE    GRADE        RECODED INTO 5-STEP INTERVALS

     CODE
           I
      2.5  * I       1)   0.0 PCT
           I
           I
     12.5  * I       1)   0.0 PCT
           I
           I
     17.5  * I       2)   0.1 PCT
           I
           I
     22.5  * I       2)   0.1 PCT
           I
           I
     27.5  ** I      17)   0.5 PCT
           I
           I
     32.5  * I       5)   0.1 PCT
           I
           I
     37.5  ** I      11)   0.3 PCT
           I
           I
     47.5  *** I      47)   1.2 PCT
           I
           I
     52.5  ************* I    244)   6.5 PCT
           I
           I
     57.5  **** I      53)   1.4 PCT
           I
           I
     62.5  **** I      68)   1.8 PCT
           I
           I
     67.5  ****** I    107)   2.8 PCT
           I
           I
     72.5  ********* I    153)   4.1 PCT
           I
           I
     77.5  ************************** I    506)  13.4 PCT
           I
           I
     82.5  ********************** I    420)  11.1 PCT
           I
           I
     87.5  ******************** I    386)  10.2 PCT
           I
           I
     92.5  ***************** I    320)   8.5 PCT
           I
           I
     97.5  ********* I    168)   4.5 PCT
           I
           I
      0.0  **************************************************************** I   1251)  33.2 PCT
 (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        200       400       600       800      1000      1200      1400      1600      1800      2000
           FREQUENCY

STATISTICS..

MEAN            77.846          STD ERROR      0.289              MEDIAN        80.499

MODE            77.500          STD DEV       14.476              VARIANCE     209.567

KURTOSIS         1.108          SKEWNESS      -1.087              RANGE         95.000

MINIMUM          2.500          MAXIMUM       97.500

VALID    OBSERVATIONS -       2515
MISSING  OBSERVATIONS -       1251
```

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   STANDING   RELATIVE CLASS STANDING

                                                         RELATIVE     ADJUSTED    CUMULATIVE
                                  VALUE    ABSOLUTE     FREQUENCY    FREQUENCY     ADJ FREQ
VALUE LABEL                                FREQUENCY    (PERCENT)    (PERCENT)    (PERCENT)
                                  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                    2.0          4          0.1          0.2          0.2
                                    3.0         15          0.4          0.6          0.8
                                    4.0         10          0.3          0.4          1.2
                                    5.0         21          0.6          0.8          2.0
                                    6.0         68          1.8          2.7          4.7
                                    7.0        201          5.3          8.0         12.7
                                    8.0        256          6.8         10.2         22.9
                                    9.0        595         15.8         23.7         46.5
                                   10.0        733         19.5         29.2         75.7
                                   11.0        420         11.2         16.7         92.4
                                   12.0        122          3.2          4.9         97.3
                                   13.0         25          0.7          1.0         98.3
                                   14.0         18          0.5          0.7         99.0
                                   15.0         21          0.6          0.8         99.8
                                   16.0          5          0.1          0.2        100.0
                                    0.0       1252         33.2      MISSING        100.0
                                           -------      -------      -------      -------
                                  TOTAL       3766        100.0        100.0        100.0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

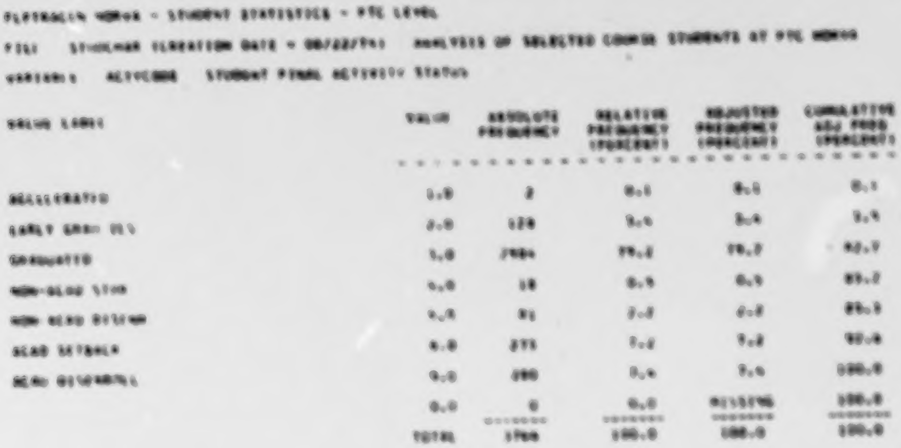
VARIABLE   STANDING   RELATIVE CLASS STANDING

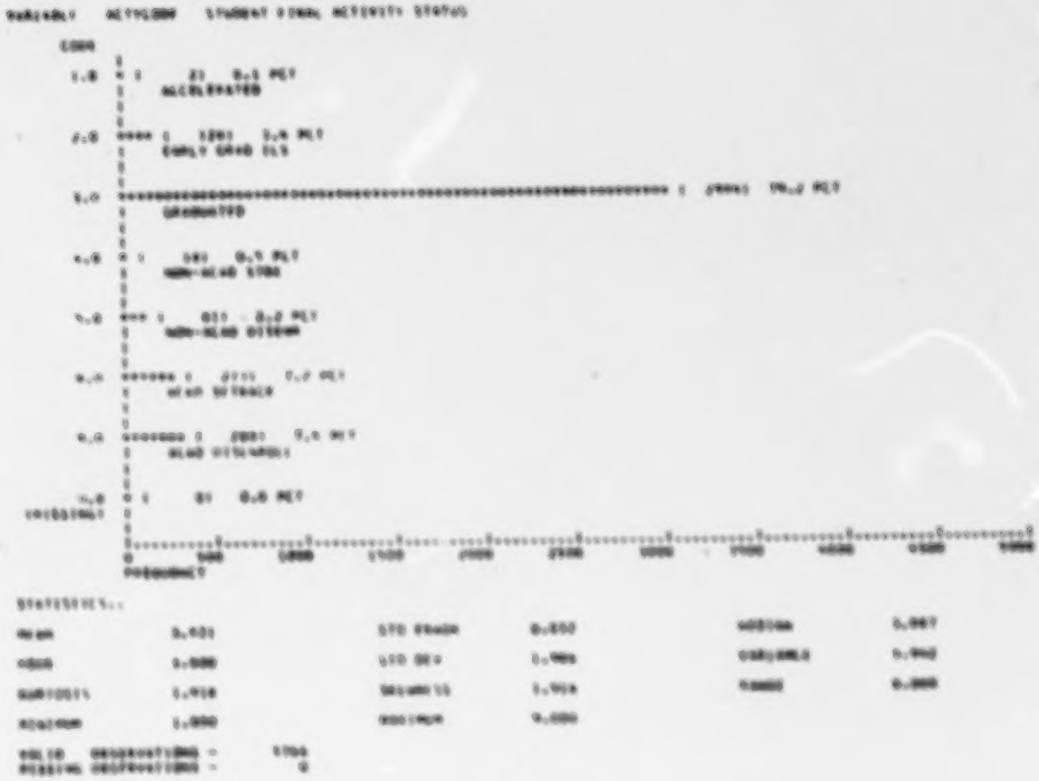
  CODE
          I
  2.0     * I     4)   0.1 PCT
          I
          I
  3.0     ** I     15)   0.4 PCT
          I
          I
  4.0     ** I     10)   0.3 PCT
          I
          I
  5.0     ** I     21)   0.6 PCT
          I
          I
  6.0     **** I     68)   1.8 PCT
          I
          I
  7.0     *********** I    201)   5.3 PCT
          I
          I
  8.0     *************** I    296)   7.9 PCT
          I
          I
  9.0     ***************************** I    565)  15.0 PCT
          I
          I
 10.0     ************************************* I    735)  19.5 PCT
          I
          I
 11.0     ********************* I    420)  11.2 PCT
          I
          I
 12.0     ******* I    122)   3.2 PCT
          I
          I
 13.0     ** I     25)   0.7 PCT
          I
          I
 14.0     ** I     18)   0.5 PCT
          I
          I
 15.0     ** I     21)   0.6 PCT
          I
          I
 16.0     * I     5)   0.1 PCT
          I
          I
  0.0     *************************************************************** I   1252)  33.2 PCT
(MISSING) I
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        200       400       600       800      1000      1200      1400      1600      1800      2000
          FREQUENCY

STATISTICS..

MEAN              9.460          STD ERROR       0.035          MEDIAN          9.619
MODE             10.000          STD DEV         1.762          VARIANCE        3.106
KURTOSIS          2.019          SKEWNESS        0.337          RANGE          14.000
MINIMUM           2.000          MAXIMUM        16.000

VALID   OBSERVATIONS -       2514
MISSING OBSERVATIONS -       1252
```





```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDMAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE    NECAWARD   COURSE AWARDS NEC

VALUE LABEL                                         VALUE    ABSOLUTE     RELATIVE     ADJUSTED    CUMULATIVE
                                                             FREQUENCY    FREQUENCY    FREQUENCY    ADJ FREQ
                                                                          (PERCENT)    (PERCENT)    (PERCENT)
                                                    - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

NO NEC AWARDED                                        1.0      1748         46.4         46.4         46.4

NEC RECOMMENDED                                       2.0      1965         52.2         52.2         98.6

XNEC RECOM                                            3.0        53          1.4          1.4        100.0
                                                             -------      -------      -------      -------
                                                    TOTAL      3766        100.0        100.0        100.0
```

```
VARIABLE    NECAWARD   COURSE AWARDS NEC

       CODE
            I
        1.0 ***************************************************************************************** (  1748)  46.4 PCT
            I     NO NEC AWARDED
            I
            I
        2.0 **************************************************************************************************** (  1965)  52.2 PCT
            I     NEC RECOMMENDED
            I
            I
        3.0 **** (    53)   1.4 PCT
            I     XNEC RECOM
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0        200       400       600       800      1000      1200      1400      1600      1800      2000
            FREQUENCY

STATISTICS..

MEAN            1.550           STD ERROR       0.009                MEDIAN          1.569

MODE            2.000           STD DEV         0.525                VARIANCE        0.276

KURTOSIS       -1.341           SKEWNESS        0.092                RANGE           2.000

MINIMUM         1.000           MAXIMUM         3.000

VALID   OBSERVATIONS -       3766
MISSING OBSERVATIONS            0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)  ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   UTASTAT    STUDENT DUTY STATUS

VALUE LABEL                                  VALUE   ABSOLUTE     RELATIVE    ADJUSTED   CUMULATIVE
                                                     FREQUENCY   FREQUENCY   FREQUENCY    ADJ FREQ
                                                                 (PERCENT)   (PERCENT)   (PERCENT)
                                            - - - - - - - - - - - - - - - - - - - - - - - - - - - -

TEMAD LT 20 WKS                                1.       2654        70.5        70.5        70.5

TEM PET LT 20                                  2.        886        23.5        23.5        94.0

TEMP FURAS                                     3.        155         4.1         4.1        98.1

TEND FURAS                                     5.         65         1.7         1.7        99.8

NOT ACTDU NAVY                                 9.          6         0.2         0.2       100.0
                                                     --------    -------     -------     -------
                                             TOTAL      3766       100.0       100.0       100.0
```

```
VARIABLE   UTASTAT    STUDENT DUTY STATUS

     CODE
          I
      1.  ****************************************************** (  2654)  70.5 PCT
          I     TEMAD LT 20 WKS
          I
          I
      2.  ****************** (   886)  23.5 PCT
          I     TEM PET LT 20
          I
          I
      3.  **** (   155)   4.1 PCT
          I     TEMP FURAS
          I
          I
      5.  ** (    65)   1.7 PCT
          I     TEND FURAS
          I
          I
      9.  * (     6)   0.2 PCT
          I     NOT ACTDU NAVY
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        500      1000      1500      2000      2500      3000      3500      4000      4500      5000
          FREQUENCY

STATISTICS..

MEAN            1.399         STD ERROR       0.013                MEDIAN          0.0

MODE            1.000         STD DEV         0.787                VARIANCE        0.619

KURTOSIS       19.316         SKEWNESS        3.656                RANGE           8.000

MINIMUM         1.000         MAXIMUM         9.000

VALID   OBSERVATIONS -       3766
MISSING OBSERVATIONS            0
```

```
FLETRACEN NIMS9 - STUDENT STATISTICS - FTC LEVEL

FILE    STUDMAN (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   PCS          ON PCS ORDERS

VALUE LABEL                                  VALUE    ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                     FREQUENCY   FREQUENCY   FREQUENCY    ADJ FREQ
                                                                 (PERCENT)   (PERCENT)   (PERCENT)
                                          - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

PERM CHG STAT                                  1.0        913        24.2        24.2        24.2

NON PCS                                        2.0       2853        75.8        75.8       100.0
                                                      -------     -------     -------     -------
                                             TOTAL       3766       100.0       100.0       100.0
```

```
VARIABLE   PCS          ON PCS ORDERS

     CODE
            I
     1.0    ****************** I   (913)  24.2 PCT
            I     PERM CHG STAT
            I
            I
     2.0    ********************************************************* I  (2853)  75.8 PCT
            I     NON PCS
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0        500      1000      1500      2000      2500      3000      3500      4000      4500      5000
            FREQUENCY

STATISTICS..

MEAN              1.758            STD ERROR       0.007                 MEDIAN          0.0

MODE              2.000            STD DEV         0.429                 VARIANCE        0.184

KURTOSIS         -0.555            SKEWNESS       -1.202                 RANGE           1.000

MINIMUM           1.000            MAXIMUM         2.000

VALID   OBSERVATIONS -      3766
MISSING OBSERVATIONS -         0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDLHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   CAPACITY   CLASS CAPACITY

VALUE LABEL                              VALUE   ABSOLUTE     RELATIVE     ADJUSTED     CUMULATIVE
                                                 FREQUENCY    FREQUENCY    FREQUENCY     ADJ FREQ
                                                              (PERCENT)    (PERCENT)    (PERCENT)
                                         - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                           2.0       23          0.6          0.6           0.6

                                           4.0       67          1.8          1.8           2.4

                                           6.0        5          0.1          0.1           2.5

                                           8.0      229          6.1          6.1           8.6

                                          10.0      111          2.9          2.9          11.6

                                          12.0      176          4.7          4.7          16.2

                                          14.0       91          2.4          2.4          18.6

                                          15.0      110          2.9          2.9          21.6

                                          16.0      549         14.6         14.6          36.1

                                          20.0      782         20.8         20.8          56.9

                                          24.0      160          4.2          4.2          61.2

                                          25.0      497         13.2         13.2          74.3

                                          30.0      968         25.7         25.7         100.0
                                                 --------     --------     --------     -------
                                         TOTAL     3768        100.0        100.0         100.0
```

```
FLETRALEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   CAPACITY   CLASS CAPACITY

    CODE
         I
   2.0   *** (     23)   0.6 PCT
         I
         I
         I
   4.0   ******** (     67)   1.8 PCT
         I
         I
         I
   6.0   ** (      5)   0.1 PCT
         I
         I
         I
   8.0   ************************ (    229)   6.1 PCT
         I
         I
         I
  10.0   ************ (    111)   2.9 PCT
         I
         I
         I
  12.0   ******************* (    176)   4.7 PCT
         I
         I
         I
  14.0   ********** (     91)   2.4 PCT
         I
         I
         I
  15.0   ************ (    110)   2.9 PCT
         I
         I
         I
  16.0   ******************************************************** (    549)  14.6 PCT
         I
         I
         I
  20.0   ******************************************************************************* (    782)  20.8 PCT
         I
         I
         I
  24.0   ***************** (    160)   4.2 PCT
         I
         I
         I
  25.0   *************************************************** (    497)  13.2 PCT
         I
         I
         I
  30.0   ************************************************************************************************* (    966)  25.7 PCT
         I
         I
         I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
         0        100       200       300       400       500       600       700       800       900      1000
         FREQUENCY

STATISTICS..

MEAN          20.709         STD ERROR        0.123             MEDIAN        20.670
MODE          30.000         STD DEV          7.521             VARIANCE      56.562
KURTOSIS      -0.798         SKEWNESS        -0.321             RANGE         28.000
MINIMUM        2.000         MAXIMUM         30.000

VALID   OBSERVATIONS -         3766
MISSING OBSERVATIONS -            0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDLMAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   BRANCH     BRANCH OF SERVICE

VALUE LABEL                                  VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                     FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                 (PERCENT)   (PERCENT)   (PERCENT)
                                             - - - - - - - - - - - - - - - - - - - - - - - - - - -

ENL ACDU NAVY                                  N       3762        99.9        99.9        99.9

OFF ACDU NAVY                                  O          2         0.1         0.1        99.9

ENL RESERVE USN                                E          1         0.0         0.0       100.0

ENL MARINES                                    M          1         0.0         0.0       100.0
                                                    -------     -------     -------     -------
                                             TOTAL     3766       100.0       100.0       100.0
```

```
VARIABLE   BRANCH     BRANCH OF SERVICE

     CODE
            I
     N      ******************************************************************** (  3762)  99.9 PCT
            I    ENL ACDU NAVY
            I
            I
     O      * (    2)   0.1 PCT
            I    OFF ACDU NAVY
            I
            I
     E      * (    1)   0.0 PCT
            I    ENL RESERVE USN
            I
            I
     M      * (    1)   0.0 PCT
            I    ENL MARINES
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0        500      1000      1500      2000      2500      3000      3500      4000      4500      5000
            FREQUENCY

VALID   OBSERVATIONS -       3766
MISSING OBSERVATIONS -          0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   AVEOFFIN   AVERAGE NO. OFFICERS IN CLASS

VALUE LABEL                                VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                   FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                               (PERCENT)   (PERCENT)   (PERCENT)
                                           - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                             0.0     3310        87.9        87.9        87.9

                                             1.0      370         9.8         9.8        97.7

                                            10.0       51         1.4         1.4        99.1

                                            16.0        8         0.2         0.2        99.3

                                            21.0       27         0.7         0.7       100.0
                                                  -------     -------     -------     -------
                                           TOTAL     3766       100.0       100.0       100.0
```

```
VARIABLE   AVEOFFIN   AVERAGE NO. OFFICERS IN CLASS
     CODE
          I
   0.0    ********************************************************************** I  3310)  87.9 PCT
          I
          I
          I
   1.0    ******** I   370)   9.8 PCT
          I
          I
          I
  10.0    ** I     51)   1.4 PCT
          I
          I
          I
  16.0    * I      8)   0.2 PCT
          I
          I
          I
  21.0    ** I     27)   0.7 PCT
          I
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        500      1000      1500      2000      2500      3000      3500      4000      4500      5000
          FREQUENCY

STATISTICS..

MEAN          0.418          STD ERROR       0.036             MEDIAN        0.0

MODE          0.0            STD DEV         2.233             VARIANCE      4.986

KURTOSIS     58.452          SKEWNESS        7.609             RANGE        21.000

MINIMUM       0.0            MAXIMUM        21.000

VALID   OBSERVATIONS -      3766
MISSING OBSERVATIONS -         0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)    ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   AVEENLIN   AVERAGE NO. ENLISTED IN CLASS

VALUE LABEL                              VALUE    ABSOLUTE     RELATIVE     ADJUSTED   CUMULATIVE
                                                 FREQUENCY    FREQUENCY    FREQUENCY     ADJ FREQ
                                                              (PERCENT)    (PERCENT)    (PERCENT)
                                         - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                           0.0        86          2.3          2.3          2.3

                                           2.0        23          0.6          0.6          2.9

                                           4.0        67          1.8          1.8          4.7

                                           6.0         5          0.1          0.1          4.8

                                           7.0       130          3.5          3.5          8.3

                                           8.0       389         10.3         10.3         18.6

                                          10.0       107          2.8          2.8         21.4

                                          12.0        29          0.8          0.8         22.2

                                          13.0        91          2.4          2.4         24.6

                                          15.0       110          2.9          2.9         27.5

                                          16.0       570         15.1         15.1         42.7

                                          19.0       210          5.6          5.6         48.2

                                          20.0       521         13.8         13.8         62.1

                                          25.0       497         13.2         13.2         75.3

                                          30.0       931         24.7         24.7        100.0
                                                  -------      -------      -------      -------
                                         TOTAL      3766        100.0        100.0        100.0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   AVEENLIN   AVERAGE NO. ENLISTED IN CLASS

     CODE
           I
     0.0   ********** (    86)   2.3 PCT
           I
           I
     2.0   *** (    23)   0.6 PCT
           I
           I
     4.0   ******** (    67)   1.8 PCT
           I
           I
     6.0   ** (     5)   0.1 PCT
           I
           I
     7.0   ************** (   130)   3.5 PCT
           I
           I
     8.0   **************************************** (   389)  10.3 PCT
           I
           I
    10.0   ************ (   107)   2.8 PCT
           I
           I
    12.0   **** (    29)   0.8 PCT
           I
           I
    14.0   ********** (    91)   2.4 PCT
           I
           I
    15.0   ************ (   110)   2.9 PCT
           I
           I
    16.0   ********************************************************** (   570)  15.1 PCT
           I
           I
    18.0   ********************** (   210)   5.6 PCT
           I
           I
    20.0   ***************************************************** (   521)  13.8 PCT
           I
           I
    25.0   *************************************************** (   497)  13.2 PCT
           I
           I
    30.0   ********************************************************************************************** (   931)  24.7 PCT
           I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        100       200       300       400       500       600       700       800       900      1000
           FREQUENCY

STATISTICS..

MEAN            19.252          STD ERROR       0.138               MEDIAN          19.880

MODE            30.000          STD DEV         8.476               VARIANCE        71.841

KURTOSIS        -0.896          SKEWNESS       -0.292               RANGE           30.000

MINIMUM          0.0            MAXIMUM        30.000

VALID   OBSERVATIONS -       3766
MISSING OBSERVATIONS -          0
```

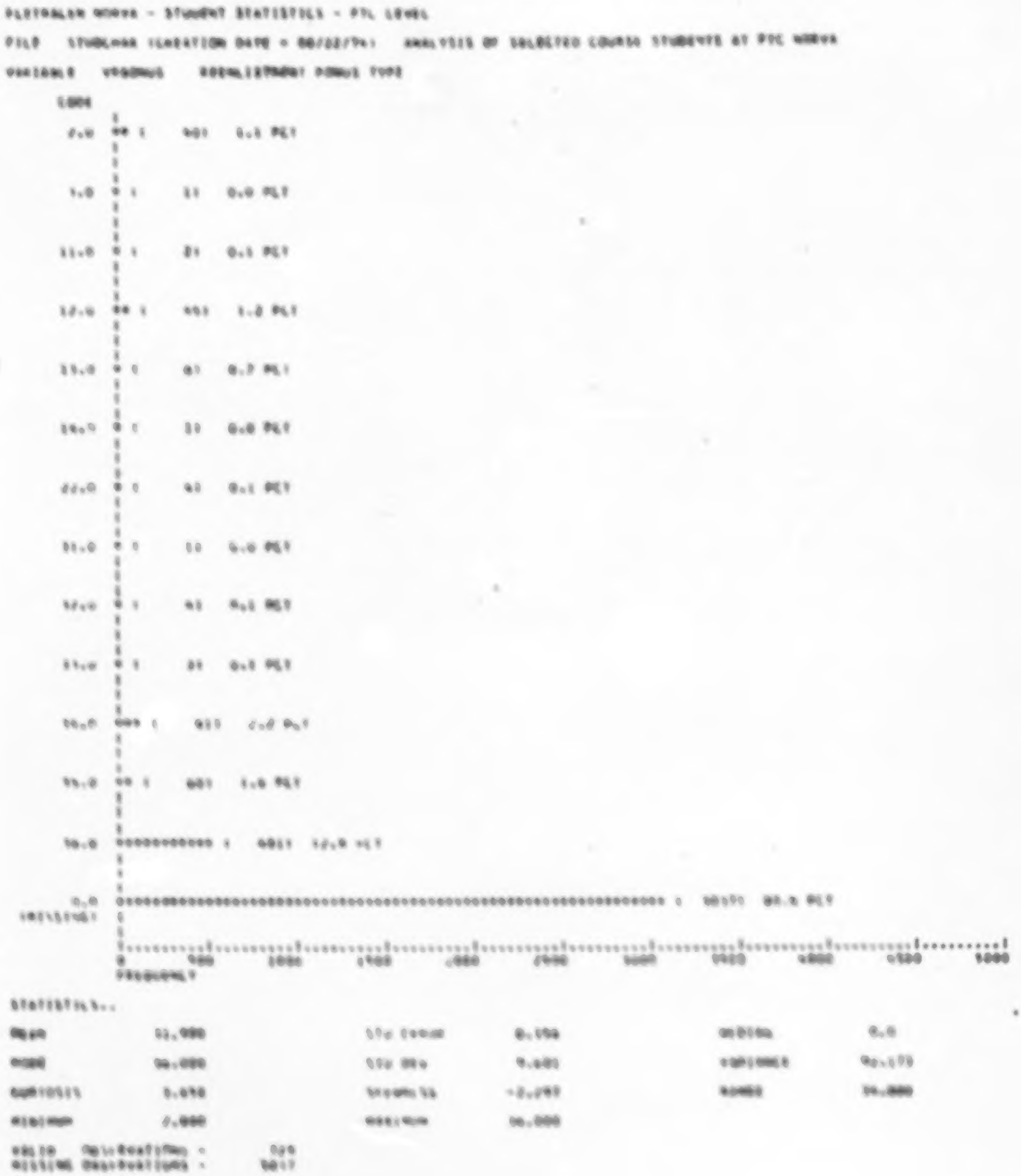
```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)    ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE    VRBONUS    REENLISTMENT BONUS TYPE

VALUE LABEL                                   VALUE    ABSOLUTE     RELATIVE     ADJUSTED    CUMULATIVE
                                                       FREQUENCY    FREQUENCY    FREQUENCY    ADJ FREQ
                                                                    (PERCENT)    (PERCENT)    (PERCENT)
                                          - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                2.0        40          1.1          5.5          5.5
                                                3.0         1          0.0          0.1          5.6
                                               11.0         2          0.1          0.3          5.9
                                               12.0        45          1.2          6.2         12.1
                                               13.0         6          0.2          0.8         12.9
                                               14.0         1          0.0          0.1         13.0
                                               22.0         4          0.1          0.5         13.6
                                               31.0         1          0.0          0.1         13.7
                                               32.0         4          0.1          0.5         14.3
                                               33.0         3          0.1          0.4         14.7
                                               34.0        81          2.2         11.1         25.8
                                               35.0        60          1.6          8.2         34.0
                                               36.0       482         12.8         66.0        100.0
                                                0.0      3037         80.6      MISSING        100.0
                                                       -------      -------      -------      -------
                                              TOTAL      3767        100.0        100.0        100.0
```



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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE    STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE    TYPEENL    TYPE OF ENLISTMENT

VALUE LABEL                          VALUE    ABSOLUTE     RELATIVE     ADJUSTED    CUMULATIVE
                                             FREQUENCY    FREQUENCY    FREQUENCY     ADJ FREQ
                                                          (PERCENT)    (PERCENT)    (PERCENT)
                                  - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                        0.         8          0.2          0.2          0.2
                                        1.       742         19.7         19.7         19.9
                                       10.        35          0.9          0.9         20.8
                                       11.       780         20.7         20.7         41.6
                                       30.      1560         41.4         41.4         83.0
                                       31.       281          7.5          7.5         90.4
                                       40.        69          1.8          1.8         92.3
                                       41.         3          0.1          0.1         92.4
                                       50.         4          0.1          0.1         92.5
                                       51.       102          2.7          2.7         95.2
                                       80.         1          0.0          0.0         95.2
                                       81.        13          0.3          0.3         95.5
                                       83.         6          0.1          0.1         95.6
                                       95.       162          4.3          4.3         99.9
                                       97.         2          0.1          0.1        100.0
                                               -------      -------      -------      -------
                                    TOTAL       3766        100.0        100.0        100.0
```

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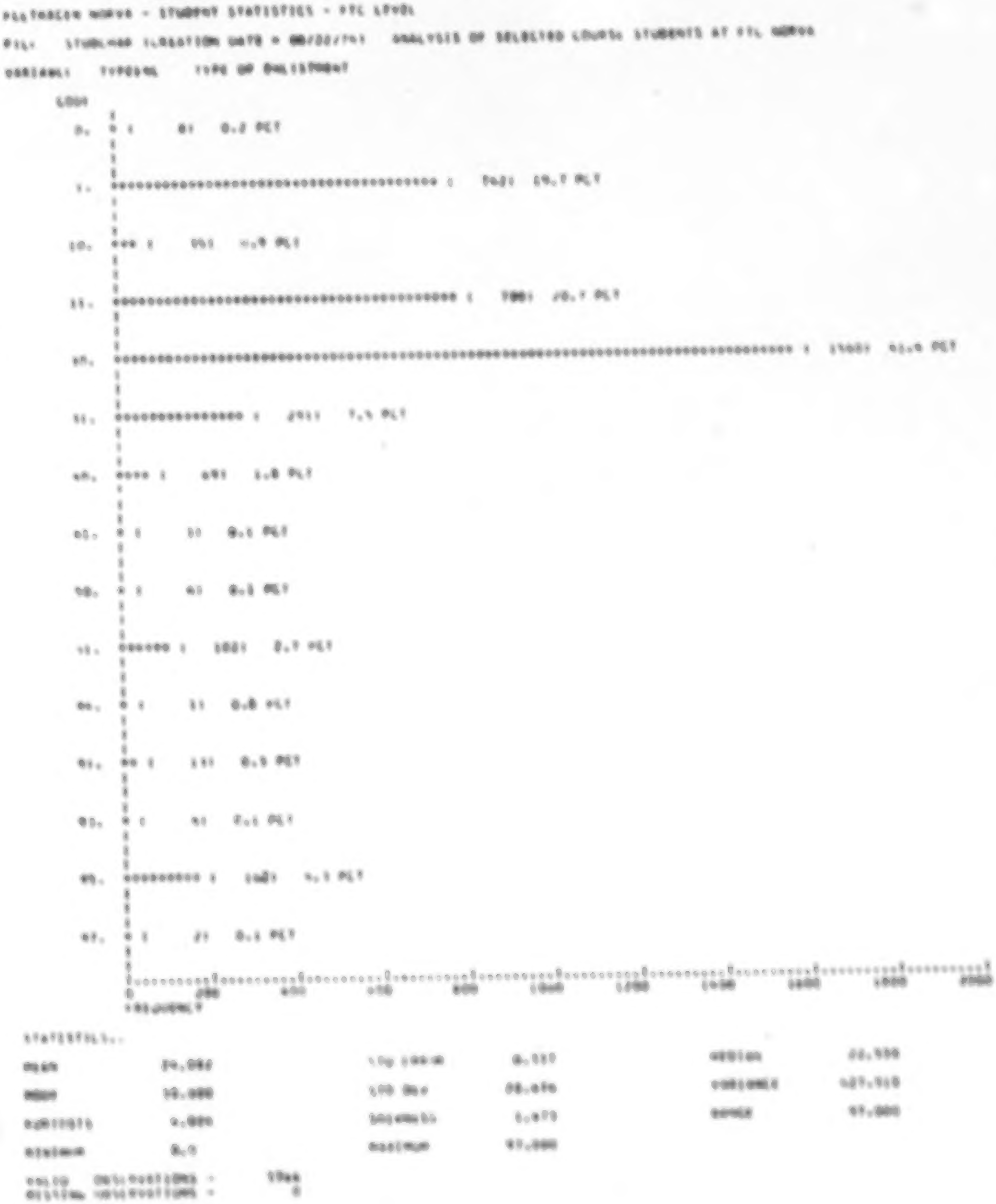

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FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   NMBRENL    NO. YEARS CURRENT ENLISTMENT

    CODE
          I
    0.0   ** (    15)   0.4 PCT
          I     NA
          I
          I
    1.0   ******************************************************************************************* (  1729)  45.9 PCT
          I     MINORITY ENL
          I
          I
    2.0   *************************************** (   764)  20.3 PCT
          I     TWO YR ENL
          I
          I
    3.0   ************************** (   506)  13.4 PCT
          I     THREE YR ENL
          I
          I
    4.0   *************************** (   515)  13.7 PCT
          I     FOUR YR ENL
          I
          I
    5.0   ********** (   188)   5.0 PCT
          I     FIVE YR ENL
          I
          I
    6.0   *** (    44)   1.2 PCT
          I     SIX YR ENL
          I
          I
    7.0   * (     4)   0.1 PCT
          I     USNR ONE YR ENL
          I
          I
    9.0   * (     1)   0.0 PCT
          I
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        200       400       600       800      1000      1200      1400      1600      1800      2000
          FREQUENCY




STATISTICS..

MEAN            2.144          STD ERROR       0.022          MEDIAN          1.682
MODE            1.000          STD DEV         1.346          VARIANCE        1.812
KURTOSIS       -0.061          SKEWNESS        0.931          RANGE           9.000
MINIMUM         0.0            MAXIMUM         9.000

VALID   OBSERVATIONS -       3766
MISSING OBSERVATIONS -          0
```

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```
FLETRACEN NORVA   STUDENT STATISTICS - FTC LEVEL

FILE   STUDMAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   CAREER     CAREER INTENT

VALUE LABEL                              VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                 FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                             (PERCENT)   (PERCENT)   (PERCENT)
                                         - - - - - - - - - - - - - - - - - - - - - - - - - - -

DISCH EAOS                                1.0       27          0.7         2.8         2.8

RES-RET EAOS                              2.0       67          1.8         7.0         9.8

UNCERTAIN                                 3.0      219          5.8        22.8        32.6

REENL AT EAOS                             4.0      605         16.1        63.0        95.5

EXTEND AT EAOS                            5.0       37          1.0         3.9        99.4

EXT PRES DUTY                             6.0        6          0.2         0.6       100.0

                                          0.0     2805         74.5      MISSING      100.0
                                                 -------     -------     -------     -------
                                         TOTAL    3766        100.0       100.0       100.0
```

```
VARIABLE   CAREER     CAREER INTENT

     CODE
           I
       1.0 ** (    27)   0.7 PCT
           I     DISCH EAOS
           I
           I
       2.0 ** (    67)   1.8 PCT
           I     RES-RET EAOS
           I
           I
       3.0 ***** (   219)   5.8 PCT
           I     UNCERTAIN
           I
           I
       4.0 ************* (   605)  16.1 PCT
           I     REENL AT EAOS
           I
           I
       5.0 ** (    37)   1.0 PCT
           I     EXTEND AT EAOS
           I
           I
       6.0 * (     6)   0.2 PCT
           I     EXT PRES DUTY
           I
           I
       0.0 ********************************************************* (  2805)  74.5 PCT
 (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        500      1000      1500      2000      2500      3000      3500      4000      4500      5000
           FREQUENCY

STATISTICS..

MEAN          3.599          STD ERROR      0.026          MEDIAN         3.777

MODE          4.000          STD DEV        0.814          VARIANCE       0.663

KURTOSIS      1.874          SKEWNESS      -1.103          RANGE          5.000

MINIMUM       1.000          MAXIMUM        6.000

VALID   OBSERVATIONS -       961
MISSING OBSERVATIONS -      2805
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL                                      09/04/74        PAGE  124

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   NMBRSCOL   NO. FORMAL SERVICE SCHOOLS ATTENDED

VALUE LABEL                                    VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                      FREQUENCY   FREQUENCY   FREQUENCY    ADJ FREQ
                                                                  (PERCENT)   (PERCENT)   (PERCENT)
                                              - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                0.0       935        24.8        24.8         24.8

                                                1.0      1033        27.4        27.4         52.3

                                                2.0       654        17.4        17.4         69.6

                                                3.0       400        10.6        10.6         80.2

                                                4.0       270         7.2         7.2         87.4

                                                5.0       474        12.6        12.6        100.0
                                                       -------     -------     -------      -------
                                              TOTAL      3766       100.0       100.0        100.0
```

```
FLETRACEN NORVA - STUDENT STATISTICS - FTC LEVEL                                      09/04/74        PAGE  125

FILE   STUDCHAR (CREATION DATE = 08/22/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE   NMBRSCOL   NO. FORMAL SERVICE SCHOOLS ATTENDED

      CODE
           I
       0.0 *********************************************** (   935)  24.8 PCT
           I
           I
           I
       1.0 **************************************************** (  1033)  27.4 PCT
           I
           I
           I
       2.0 ********************************* (   654)  17.4 PCT
           I
           I
           I
       3.0 ******************** (   400)  10.6 PCT
           I
           I
           I
       4.0 ************** (   270)   7.2 PCT
           I
           I
           I
       5.0 ************************ (   474)  12.6 PCT
           I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        200       400       600       800      1000      1200      1400      1600      1800      2000
           FREQUENCY

STATISTICS..

MEAN              1.896          STD ERROR        0.027               MEDIAN           1.418

MODE              1.000          STD DEV          1.665               VARIANCE         2.773

KURTOSIS         -0.778          SKEWNESS         0.653               RANGE            5.000

MINIMUM           0.0            MAXIMUM          5.000

VALID   OBSERVATIONS -        3766
MISSING OBSERVATIONS -           0
```

Course Statistics. Thirty-six course-related variables were selected to provide potential insight into the model parameters. A total of 110 courses, each representing a case or observation, was analyzed. The data related to each observation are tabulated for each of the thirty-six variables and shown in the following presentation of Course Statistical Data. Several of the statistics in the COURSE data base; e.g., GCT, were summarized from special by-course breakdowns of the data in the STUDENT data base.

COURSE
STATISTICAL
DATA

(Because of the number of tables and charts to be displayed in this section, separate figure numbers have not been assigned.)

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Descriptive Summary of Course Variables

The following tables and histograms display the number of cases (courses) by variable value. In cases where no definitive quantity for the variable was available, the case is classified in a "missing values" category. The tables give the absolute number of cases per variable value (absolute frequency), the percentage each variable value is of the total including missing values (relative frequency), and the percentage each variable value is of the total excluding missing values (adjusted frequency). The histograms portray graphically the cases per variable value and indicate the absolute frequency and relative frequency that each value occurred. The key statistics which characterize the sample distribution for each variable appear at the end of each histogram.

Most of the tables and histograms are value labeled, however, the following list gives additional information and references which may be needed to interpret a particular variable.

SCHOOL - Course data were collected from the eleven schools at the FLETRACEN NORVA. The school names are identified as value labels.

INSTDAYS - The values for the Days of Instruction variable can be read directly and indicate the course length in days for each course sampled.

CAPACITY - The values for the Class Capacity variable can be read directly and indicate the total number of seats available per course.

AOI - The values for this variable give the Average Number of Officers expected to attend each course.

AEI - The values for this variable give the Average Number of Enlisted Personnel expected to attend each course.

CONVFREQ - The values for this variable designate the times per year classes convene for each course.

CRSEAGE - The values for the Course Age variable can be read directly and indicate the number of years each course has been in existence.

QTACTRL - The values for this variable identify whether Norfolk or BUPERS maintains quota control for each course.

MODMGR - The values for this variable indicate whether Norfolk is the Course Control Model Manager for each course.

PRIORITY - The Priority variable indicates the assigned priority for each course on a scale of from 1 to 32. A value of 1 is a very high priority course while a value of 32 indicates a low priority course.

CRSETYPE - Courses were classified into four major categories and are identified by the values assigned to the Type of Course variable.

PCTLAB - The percentage of course time devoted to laboratory type activities is identified by this variable.

CHGABLTY - The relative volatility or susceptibility of course materials to change is indicated on a scale of one to nine in this variable.

GRADTYPE - Several final grading systems exist at the Fleet Training Center. The "numeric" category covers both 0-100 and 0-4 grading scales.

PASSLEVL - The minimum final grade value which a student must attain to pass a course is indicated by this variable. The values 20, 25, and 28, are actually 2.0, 2.5, and 2.8, referring to the pass level for the 0-4 scale, while 63, 70, and 75 are minimum pass levels associated with a 0-100 scale.

PCTUTIL - The percent of students attending a course in relation to the course capacity is described by the Percent of Course Utilization variable. To reduce the number of values, the variable was recoded into 5-step intervals, therefore, a value of 100.0 covers utilization values of 98 through 102.

NECAWARD - Courses which award NEC's to students successfully completing are identified by this variable.

PCTNOSHO - The Percent No-Shows variable describes the relationship of students showing up for a course as compared to the total number of students expected. Those not showing up as expected are classified as no-shows.

BACKLOG - The enrollment backlog in weeks is identified by the value of this variable. A value of "99" is treated as a "missing value" and was generally assigned to BUPERS controlled courses where no backlog figure was known.

PCTSUBQT - The Percent Substitute Quotas variable identifies students entering classes through other than normal enrollment means as a result of last minute availabilities.

PCTFAIL - The values for this variable describe the percent of students failing a course for academic reasons. They represent the percent of Student Action Codes K and U (disenrollments for academic reasons).

PCTACSBK - The Percent of Academic Setbacks variable identifies the percent of Student Action Code N (setbacks to another class in the same course for academic reasons).

PCTNASBK - The Percent of Nonacademic Setbacks variable represents a count of Student Action Code T (setbacks to another class in the same course for nonacademic reasons).

PCTNADIS - The Percent of Non-Academic Disenrollments variable looks at Student Action Codes L and V (disenrollments for non-academic reasons).

GCT - The General Classification Test average for students attending the forty-two courses contained in the STUDENT data base is represented by this variable. Sixty-eight of the 110 courses had no GCT average data available.

ARI - The data for the Arithmetic Test variable were obtained in the same manner as GCT.

MECH - The data for the Mechanical Test variable were obtained in the same manner as GCT.

CLER - The data for the Clerical Aptitude Test variable were obtained in the same manner as GCT.

SHOP - The data for the Shop Practices Test variable were obtained in the same manner as GCT.

AFQT - The data for the Armed Forces Qualification Test variable were obtained in the same manner as GCT.

ETST - The data for the Electronic Technician Selection Test variable were obtained in the same manner as GCT.

STUDAGE - As with the previous test score averages, the Average Student Ages were obtained from the STUDENT data base for the forty-two courses sampled.

STUDRATE - The values for the Student Rate variable represent the average paygrade (1-9) of students attending each of the courses. Since the Fleet Training Center has this information, it was available for 109 of the 110 courses.

INSTROT - The values for this variable describe the approximate average number of months that a qualified instructor stays associated with the actual teaching of a particular course.

INSTASGN - This variable identifies the number of instructors normally required to be associated with the teaching of a single class.

INSTRATE - The average paygrade (1-9) of instructors assigned to the actual teaching of classes for a particular course is represented by this variable.

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```
[illegible] - COURSE STATISTICS

VARIABLE   FORMAT  WIDTH     MISSING VALUES
[illegible]  F       1
[illegible]  A       1
[illegible]  A       1
SCHOOL       A       1
COURSE       F       1
CASE         F       1
INSTDAYS     F       1
CAPACITY     F       1
AFI          F       1
ARI          F       1
[illegible]  F       1          9.
[illegible]  F       1
[illegible]  F       1
[illegible]  F       1
CASETYPE     F       1          1.
PRIORITY     F       1          9.
PCTLAB       F       1
[illegible]  F       1          9.
GRADTYPE     F       1          3.
PASSLEVL     F       1
[illegible]  F       1
[illegible]  F       1
PCTUTIL      F       1          9.
[illegible]  F       1          10.
BACKLOG      F       1          9.
[illegible]  F       1          99.
[illegible]  F       1
[illegible]  F       1
PCTFAIL      F       1
[illegible]  F       1
[illegible]  F       1
[illegible]  F       1
GCT          F       1          9.
ARI          F       1          0.
MECH         F       1          9.
```

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```
[illegible] NORVA   COURSE STATISTICS

DUMP OF LABEL INFORMATION..

VALUE LABEL FOR     SCHOOL                       B        ACGR
VALUE LABEL FOR     SCHOOL                       C        ELEC
VALUE LABEL FOR     SCHOOL                       D        DC-FF
VALUE LABEL FOR     SCHOOL                       E        S-M
VALUE LABEL FOR     SCHOOL                       F        IT-AD
VALUE LABEL FOR     SCHOOL                       G        S-DA
VALUE LABEL FOR     SCHOOL                       H        ET
VALUE LABEL FOR     SCHOOL                       J        COMM
VALUE LABEL FOR     SCHOOL                       K        TTM
VALUE LABEL FOR     SCHOOL                       M        NAV
VALUE LABEL FOR     SCHOOL                       N        ASW-EW
VARIABLE LABEL FOR INSTDAYS                               DAYS OF INSTRUCTION
VARIABLE LABEL FOR CAPACITY                               CLASS CAPACITY
VARIABLE LABEL FOR AOI                                    AVERAGE NO. OFFICERS IN CLASS
VARIABLE LABEL FOR AEI                                    AVERAGE NO. ENLISTED IN CLASS
VARIABLE LABEL FOR CONVFREG                               TIMES PER YEAR CLASS CONVENES
VARIABLE LABEL FOR QTACTRL                                FUNCTION CONTROLLING COURSE QUOTAS
VALUE LABEL FOR     QTACTRL                      1.       NORFOLK
VALUE LABEL FOR     QTACTRL                      2.       ROVERS
VALUE LABEL FOR     QTACTRL                      3.       OTHER
VARIABLE LABEL FOR CRSEAGE                                AGE OF COURSE IN YEARS
VARIABLE LABEL FOR HOMNGR                                 COMM LOCATED AT FTC NORVA
VALUE LABEL FOR     HOMNGR                       0.       NOT NORFOLK
VALUE LABEL FOR     HOMNGR                       1.       NORFOLK
VARIABLE LABEL FOR CRSETYPE                               TYPE OF COURSE
VALUE LABEL FOR     CRSETYPE                     1.       LECTURE-LABORATORY
VALUE LABEL FOR     CRSETYPE                     2.       ALL LECTURE
VALUE LABEL FOR     CRSETYPE                     3.       TEAM TRAINING
VALUE LABEL FOR     CRSETYPE                     4.       INDIV LEARNING
VALUE LABEL FOR     CRSETYPE                     5.       OTHER
VARIABLE LABEL FOR PRIORITY                               PRIORITY VALUE FOR COURSE
VALUE LABEL FOR     PRIORITY                     1.       HIGH
VALUE LABEL FOR     PRIORITY                     2.       HIGH
VALUE LABEL FOR     PRIORITY                     3.       HIGH
VALUE LABEL FOR     PRIORITY                     4.       HIGH
VALUE LABEL FOR     PRIORITY                    29.       LOW
VALUE LABEL FOR     PRIORITY                    30.       LOW
VALUE LABEL FOR     PRIORITY                    31.       LOW
VALUE LABEL FOR     PRIORITY                    32.       LOW
VARIABLE LABEL FOR PCTLAB                                 PERCENT OF COURSE IN LABORATORY
VARIABLE LABEL FOR CHGABLTY                               DEGREE OF COURSE REVISION
VALUE LABEL FOR     CHGABLTY                     1.       NO REVISION RQD
VALUE LABEL FOR     CHGABLTY                     2.       MINIMAL
VALUE LABEL FOR     CHGABLTY                     3.       MINOR
VALUE LABEL FOR     CHGABLTY                     4.       MINOR ANNUAL
VALUE LABEL FOR     CHGABLTY                     5.       MINOR ON-GOING
VALUE LABEL FOR     CHGABLTY                     6.       MAJOR
VALUE LABEL FOR     CHGABLTY                     7.       MAJOR ANNUAL
VALUE LABEL FOR     CHGABLTY                     8.       MAJOR ON-GOING
VALUE LABEL FOR     CHGABLTY                     9.       EXTENSIVE ON-GOING
VARIABLE LABEL FOR GRADTYPE                               TYPE OF GRADING SYSTEM
VALUE LABEL FOR     GRADTYPE                     1.       NON-GRADED
VALUE LABEL FOR     GRADTYPE                     2.       PASS-FAIL
VALUE LABEL FOR     GRADTYPE                     3.       NUMERIC
VALUE LABEL FOR     GRADTYPE                     4.       LETTER
VARIABLE LABEL FOR PASSLEVL                               MINIMUM STUDENT PASS LEVEL
VARIABLE LABEL FOR NECAWARD                               COURSE AWARDS NEC
VALUE LABEL FOR     NECAWARD                     0.       NO NEC AWARDED
VALUE LABEL FOR     NECAWARD                     1.       NEC RECOMMENDED
VARIABLE LABEL FOR PCTUTIL                                RECODED INTO 5-STEP INTERVALS
VARIABLE LABEL FOR PCTNOSHO                               PCT OF NO SHOWS
VARIABLE LABEL FOR BACKLOG                                ENROLLMENT BACKLOG IN WEEKS     PCTSUHOT
VARIABLE LABEL FOR PCTFAIL                                PCT OF STUDENTS FAILING
VARIABLE LABEL FOR PCTACSBR                               PCT OF ACADEMIC SETBACKS
VARIABLE LABEL FOR PCTNASBR                               PCT OF NON-ACAD SETBACKS
VARIABLE LABEL FOR PCTNADIS                               PCT OF NON-ACAD DISENROLLMENTS
VARIABLE LABEL FOR STUDAGE                                AVE AGE OF STUDENTS
VARIABLE LABEL FOR STUDRATE                               AVE RATE OF STUDENTS
VARIABLE LABEL FOR INSTROT                                AVE INSTR ROTATION FREQ IN MONTHS
VARIABLE LABEL FOR INSTASGN                               AVE NO. INSTRUCTORS PER CLASS
VARIABLE LABEL FOR INSTRATE                               AVE PAYGRADE OF INSTRUCTORS
```

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FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   SCHOOL

VALUE LABEL                                 VALUE   ABSOLUTE   RELATIVE    ADJUSTED    CUMULATIVE
                                                    FREQUENCY  FREQUENCY   FREQUENCY   ADJ FREQ
                                                               (PERCENT)   (PERCENT)   (PERCENT)
                                            - - - - - - - - - - - - - - - - - - - - - - - - - -

ACGR                                          B          3        2.7         2.7          2.7

ELEC                                          C         11       10.0        10.0         12.7

DC-PP                                         D         14       12.7        12.7         25.5

3-M                                           E          2        1.8         1.8         27.3

IT-AD                                         F          9        8.2         8.2         35.5

S-DA                                          G         14       12.7        12.7         48.2

FT                                            H         28       25.5        25.5         73.6

COMM                                          J          9        8.2         8.2         81.8

TTM                                           K          3        2.7         2.7         84.5

NAV                                           M         10        9.1         9.1         93.6

ASW-EW                                        N          7        6.4         6.4        100.0
                                                    -------    -------     -------      -------
                                            TOTAL      110      100.0       100.0        100.0
```

```
FLETRACEN NORVA - COURSE STATISTICS                                          09/04/74        PAGE   11

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   SCHOOL

      CODE
              I
      B       ******* I      3)   2.7 PCT
              I    ACGR
              I
              I
      C       *********************** I     11)  10.0 PCT
              I    ELEC
              I
              I
      D       ***************************** I     14)  12.7 PCT
              I    DC-PP
              I
              I
      E       ***** I      2)   1.8 PCT
              I    3-M
              I
              I
      F       ******************* I      9)   8.2 PCT
              I    IT-AU
              I
              I
      G       ***************************** I     14)  12.7 PCT
              I    S-DA
              I
              I
      H       ********************************************************* I     28)  25.5 PCT
              I    FT
              I
              I
      J       ******************* I      9)   8.2 PCT
              I    COMM
              I
              I
      K       ******* I      3)   2.7 PCT
              I    TTM
              I
              I
      M       ********************* I     10)   9.1 PCT
              I    NAV
              I
              I
      N       *************** I      7)   6.4 PCT
              I    ASW-EW
              I
              I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
              0         5        10        15        20        25        30        35        40        45        50
              FREQUENCY

VALID   OBSERVATIONS -        110
MISSING OBSERVATIONS -          0
```

```
FLTRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   INSTDAYS   DAYS OF INSTRUCTION

VALUE LABEL                                  VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                    FREQUENCY   FREQUENCY   FREQUENCY    ADJ FREQ
                                                                (PERCENT)   (PERCENT)   (PERCENT)
                                             - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                               1.         9          8.2         8.2          8.2

                                               2.         7          6.4         6.4         14.5

                                               3.         8          7.3         7.3         21.8

                                               4.         2          1.8         1.8         23.6

                                               5.        24         21.8        21.8         45.5

                                               6.         1          0.9         0.9         46.4

                                               8.         2          1.8         1.8         48.2

                                              10.        17         15.5        15.5         63.6

                                              12.         1          0.9         0.9         64.5

                                              15.        11         10.0        10.0         74.5

                                              20.         8          7.3         7.3         81.8

                                              25.         9          8.2         8.2         90.0

                                              30.         3          2.7         2.7         92.7

                                              40.         5          4.5         4.5         97.3

                                              45.         1          0.9         0.9         98.2

                                              55.         1          0.9         0.9         99.1

                                              60.         1          0.9         0.9        100.0
                                                    -------     -------     -------      -------
                                           TOTAL        110        100.0       100.0        100.0
```

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```
FLETRAGEN NORVA - COURSE STATISTICS

ILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   INSTDAYS   DAYS OF INSTRUCTION

     CODE
           I
      1.   ******************* (     9)   8.2 PCT
           I
           I
           I
      2.   *************** (     7)   6.4 PCT
           I
           I
           I
      3.   ***************** (     8)   7.3 PCT
           I
           I
           I
      4.   ***** (     2)   1.8 PCT
           I
           I
           I
      5.   ************************************************* (    24)  21.8 PCT
           I
           I
           I
      6.   *** (     1)   0.9 PCT
           I
           I
           I
      8.   ***** (     2)   1.8 PCT
           I
           I
           I
     10.   *********************************** (    17)  15.5 PCT
           I
           I
           I
     12.   *** (     1)   0.9 PCT
           I
           I
           I
     15.   *********************** (    11)  10.0 PCT
           I
           I
           I
     20.   ***************** (     8)   7.3 PCT
           I
           I
           I
     25.   ******************* (     9)   8.2 PCT
           I
           I
           I
     30.   ******* (     3)   2.7 PCT
           I
           I
           I
     40.   *********** (     5)   4.5 PCT
           I
           I
           I
     45.   *** (     1)   0.9 PCT
           I
           I
           I
     55.   *** (     1)   0.9 PCT
           I
           I
           I
     60.   *** (     1)   0.9 PCT
           I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0         5        10        15        20        25        30        35        40        45        50
           FREQUENCY

STATISTICS...

MEAN           12.536          STD ERROR       1.159          MEDIAN          9.235

MODE            5.000          STD DEV        12.158          VARIANCE      147.811

KURTOSIS        2.596          SKEWNESS        1.626          RANGE          59.000

MINIMUM         1.000          MAXIMUM        60.000

VALID   OBSERVATIONS -        110
MISSING OBSERVATIONS -          0
```

```
FLETRACEN NORVA - COURSE STATISTICS

FILE    CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   CAPACITY   CLASS CAPACITY

VALUE LABEL
                                 VALUE   ABSOLUTE     RELATIVE    ADJUSTED   CUMULATIVE
                                         FREQUENCY   FREQUENCY   FREQUENCY    ADJ FREQ
                                                     (PERCENT)   (PERCENT)   (PERCENT)
                              - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                   3.         1         0.9         0.9          0.9

                                   4.        17        15.5        15.5         16.4

                                   5.         1         0.9         0.9         17.3

                                   6.         4         3.6         3.6         20.9

                                   8.        16        14.5        14.5         35.5

                                  10.         9         8.2         8.2         43.6

                                  12.         5         4.5         4.5         48.2

                                  14.         2         1.8         1.8         50.0

                                  15.         7         6.4         6.4         56.4

                                  16.         7         6.4         6.4         62.7

                                  20.        17        15.5        15.5         78.2

                                  24.         6         5.5         5.5         83.6

                                  25.         6         5.5         5.5         89.1

                                  30.         5         4.5         4.5         93.6

                                  35.         1         0.9         0.9         94.5

                                  45.         2         1.8         1.8         96.4

                                  50.         1         0.9         0.9         97.3

                                  60.         1         0.9         0.9         98.2

                                  72.         1         0.9         0.9         99.1

                                  80.         1         0.9         0.9        100.0
                                        -------     -------     -------      -------
                                TOTAL       110       100.0       100.0        100.0
```

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```
PLETNAGEN NORVA - COURSE STATISTICS
FILE   CRSECHAR (CREATION DATE = 09/03/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   CAPACITY   CLASS CAPACITY

      CODE
            I
        3.  ***** (     1)   0.9 PCT
            I
            I
            I
        4.  ************************************************************************************* (    17)   15.5 PCT
            I
            I
            I
        5.  ***** (     1)   0.9 PCT
            I
            I
            I
        6.  ****************************** (     6)   5.5 PCT
            I
            I
            I
        8.  ******************************************************************************** (    16)   14.5 PCT
            I
            I
            I
       10.  ********************************************* (     9)   8.2 PCT
            I
            I
            I
       12.  ************************* (     5)   4.5 PCT
            I
            I
            I
       14.  ********** (     2)   1.8 PCT
            I
            I
            I
       15.  *********************************** (     7)   6.4 PCT
            I
            I
            I
       16.  *********************************** (     7)   6.4 PCT
            I
            I
            I
       20.  ************************************************************************************* (    17)   15.5 PCT
            I
            I
            I
       24.  ****************************** (     6)   5.5 PCT
            I
            I
            I
       25.  ****************************** (     6)   5.5 PCT
            I
            I
            I
       30.  ************************* (     5)   4.5 PCT
            I
            I
            I
       35.  ***** (     1)   0.9 PCT
            I
            I
            I
       45.  ********** (     2)   1.8 PCT
            I
            I
            I
       56.  ***** (     1)   0.9 PCT
            I
            I
            I
       60.  ***** (     1)   0.9 PCT
            I
            I
            I
       72.  ***** (     1)   0.9 PCT
            I
            I
            I
       80.  ***** (     1)   0.9 PCT
            I
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0         2         4         6         8        10        12        14        16        18        20
            FREQUENCY

STATISTICS..

MEAN            16.345          STD ERROR        1.270          MEDIAN          14.500
MODE            20.000          STD DEV         13.322          VARIANCE       177.476
KURTOSIS         6.976          SKEWNESS         2.293          RANGE           77.000
MINIMUM          3.000          MAXIMUM         80.000

VALID   OBSERVATIONS -        110
MISSING OBSERVATIONS -          0
```

```
FLETRACEN NORVA - COURSE STATISTICS
FILE    CASELMAN (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   A01        AVERAGE NO. OFFICERS IN CLASS

VALUE LABEL                              VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                 FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                             (PERCENT)   (PERCENT)   (PERCENT)
                                         - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                           0.       82         74.5        74.5        74.5
                                           1.        5          4.5         4.5        79.1
                                           2.        4          3.6         3.6        82.7
                                           4.        3          2.7         2.7        85.5
                                           5.        4          3.6         3.6        89.1
                                           6.        1          0.9         0.9        90.0
                                           9.        1          0.9         0.9        90.9
                                          10.        4          3.6         3.6        94.5
                                          12.        2          1.8         1.8        96.4
                                          16.        2          1.8         1.8        98.2
                                          20.        1          0.9         0.9        99.1
                                          21.        1          0.9         0.9       100.0
                                                 -------     -------     -------     -------
                                         TOTAL     110        100.0       100.0       100.0
```

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FLTTRACEN NORVA   COURSE STATISTICS

FILE   CASFCHAN (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   A11        AVERAGE NO. OFFICERS IN CLASS

     CODE
           I
      0.   *********************************************************************************** (   82)  74.5 PCT
           I
           I
           I
      1.   ****** (    5)   4.5 PCT
           I
           I
           I
      2.   ***** (    4)   3.6 PCT
           I
           I
           I
      3.   **** (    3)   2.7 PCT
           I
           I
           I
      5.   ***** (    4)   3.6 PCT
           I
           I
           I
      6.   ** (    1)   0.9 PCT
           I
           I
           I
      9.   ** (    1)   0.9 PCT
           I
           I
           I
     10.   ***** (    4)   3.6 PCT
           I
           I
           I
     12.   *** (    2)   1.8 PCT
           I
           I
           I
     16.   *** (    2)   1.8 PCT
           I
           I
           I
     20.   ** (    1)   0.9 PCT
           I
           I
           I
     21.   ** (    1)   0.9 PCT
           I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        10        20        30        40        50        60        70        80        90       100
           FREQUENCY

STATISTICS..

MEAN              1.764            STD ERROR        0.405              MEDIAN           0.0

MODE              0.0              STD DEV          4.245              VARIANCE        18.017

KURTOSIS          7.677            SKEWNESS         2.829              RANGE           21.000

MINIMUM           0.0              MAXIMUM         21.000

VALID   OBSERVATIONS -         110
MISSING OBSERVATIONS -           0
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FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   AE1         AVERAGE NO. ENLISTED IN CLASS

VALUE LABEL                                  VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                     FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                 (PERCENT)   (PERCENT)   (PERCENT)
                                             - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                               0.       10          9.1         9.1         9.1

                                               2.        1          0.9         0.9        10.0

                                               3.        1          0.9         0.9        10.9

                                               4.       17         15.5        15.5        26.4

                                               5.        2          1.8         1.8        28.2

                                               6.        4          3.6         3.6        31.8

                                               7.        5          4.5         4.5        36.4

                                               8.       17         15.5        15.5        51.8

                                               9.        2          1.8         1.8        53.6

                                              10.        8          7.3         7.3        60.9

                                              11.        4          3.6         3.6        64.5

                                              12.        2          1.8         1.8        66.4

                                              13.        2          1.8         1.8        68.2

                                              14.        2          1.8         1.8        70.0

                                              15.        6          5.5         5.5        75.5

                                              16.        4          3.6         3.6        79.1

                                              18.        1          0.9         0.9        80.0

                                              19.        1          0.9         0.9        80.9

                                              20.        6          5.5         5.5        86.4

                                              22.        1          0.9         0.9        87.3

                                              25.        6          5.5         5.5        92.7

                                              26.        1          0.9         0.9        93.6

                                              30.        2          1.8         1.8        95.5

                                              34.        1          0.9         0.9        96.4

                                              39.        1          0.9         0.9        97.3

                                              40.        1          0.9         0.9        98.2

                                              41.        1          0.9         0.9        99.1

                                              47.        1          0.9         0.9       100.0
                                                     -------     -------     -------     -------
                                             TOTAL     110        100.0       100.0       100.0
```

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FLETRACEN NORVA - COURSE STATISTICS
FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   AE1          AVERAGE NO. ENLISTED IN CLASS
     CODE
          I
       0. ****************************************************** I     10)   9.1 PCT
          I
          I
          I
       2. ****** I     1)   0.9 PCT
          I
          I
          I
       3. ****** I     1)   0.9 PCT
          I
          I
          I
       4. ********************************************************************************************* I     17)  15.5 PCT
          I
          I
          I
       5. *********** I     2)   1.8 PCT
          I
          I
          I
       6. ********************** I     4)   3.6 PCT
          I
          I
          I
       7. *************************** I     5)   4.5 PCT
          I
          I
          I
       8. ********************************************************************************************* I     17)  15.5 PCT
          I
          I
          I
       9. *********** I     2)   1.8 PCT
          I
          I
          I
      10. ******************************************** I     8)   7.3 PCT
          I
          I
          I
      11. ********************** I     4)   3.6 PCT
          I
          I
          I
      12. *********** I     2)   1.8 PCT
          I
          I
          I
      13. *********** I     2)   1.8 PCT
          I
          I
          I
      14. *********** I     2)   1.8 PCT
          I
          I
          I
      15. ********************************* I     6)   5.5 PCT
          I
          I
          I
      16. ********************** I     4)   3.6 PCT
          I
          I
          I
      18. ****** I     1)   0.9 PCT
          I
          I
          I
      19. ****** I     1)   0.9 PCT
          I
          I
          I
      20. ********************************* I     6)   5.5 PCT
          I
          I
          I
      22. ****** I     1)   0.9 PCT
          I
          I
          I
      25. ********************************* I     6)   5.5 PCT
          I
          I
          I
      26. ****** I     1)   0.9 PCT
          I
          I
          I
      30. *********** I     2)   1.8 PCT
          I
          I
          I
      34. ****** I     1)   0.9 PCT
          I
          I
          I
      39. ****** I     1)   0.9 PCT
          I
```

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```
FLETRACEN NONVA - COURSE STATISTICS
          I
     40.  ****** (     1)   0.9 PCT
          I
          I
          I
     41.  ****** (     1)   0.9 PCT
          I
          I
          I
     47.  ****** (     1)   0.9 PCT
          I
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0         2         4         6         8         10        12        14        16        18        20
          FREQUENCY

STATISTICS...

MEAN          11.927               STD ERROR       0.913              MEDIAN          8.182
MODE           0.000               STD DEV         9.576              VARIANCE       91.701
KURTOSIS       2.066               SKEWNESS        1.420              RANGE          47.000
MINIMUM        0.0                 MAXIMUM        47.000

VALID   OBSERVATIONS -        110
MISSING OBSERVATIONS            0
```

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```
[illegible] NORVA   COURSE STATISTICS

FILE   [illegible]  (CREATION DATE = [illegible])   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   [illegible]   TIMES PER YEAR CLASS CONVENES

VALUE LABEL                               VALUE   ABSOLUTE    RELATIVE    ADJUSTED  CUMULATIVE
                                                  FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                              (PERCENT)   (PERCENT)  (PERCENT)
                                          - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                            4.       14        12.7        13.0        13.0
                                            5.        8         7.3         7.4        20.4
                                            6.       11        10.0        10.2        30.6
                                            8.        3         2.7         2.8        33.3
                                           10.        3         2.7         2.8        36.1
                                           11.        1         0.9         0.9        37.0
                                           12.       19        17.3        17.6        54.6
                                           15.        3         2.7         2.8        57.4
                                           17.        1         0.9         0.9        58.3
                                           20.        1         0.9         0.9        59.3
                                           22.        2         1.8         1.9        61.1
                                           24.       26        23.6        24.1        85.2
                                           25.        2         1.8         1.9        87.0
                                           36.        1         0.9         0.9        88.0
                                           37.        1         0.9         0.9        88.9
                                           44.        1         0.9         0.9        89.8
                                           48.        1         0.9         0.9        90.7
                                           50.        3         2.7         2.8        93.5
                                           60.        2         1.8         1.9        95.4
                                          100.        2         1.8         1.9        97.2
                                          150.        1         0.9         0.9        98.1
                                          200.        1         0.9         0.9        99.1
                                          600.        1         0.9         0.9       100.0
                                            0.        2         1.8      MISSING      100.0
                                                   -------     -------     -------     -------
                                          TOTAL     110       100.0       100.0       100.0
```

```
FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   CONVFREQ   TIMES PER YEAR CLASS CONVENES

     CODE
            I
      4.    ***************************** (    14)  12.7 PCT
            I
            I
            I
      5.    ***************** (     8)   7.3 PCT
            I
            I
            I
      6.    *********************** (    11)  10.0 PCT
            I
            I
            I
      8.    ******* (     3)   2.7 PCT
            I
            I
            I
     10.    ******* (     3)   2.7 PCT
            I
            I
            I
     11.    *** (     1)   0.9 PCT
            I
            I
            I
     12.    *************************************** (    19)  17.3 PCT
            I
            I
            I
     13.    ******* (     3)   2.7 PCT
            I
            I
            I
     17.    *** (     1)   0.9 PCT
            I
            I
            I
     20.    *** (     1)   0.9 PCT
            I
            I
            I
     22.    ***** (     2)   1.8 PCT
            I
            I
            I
     24.    ***************************************************** (    26)  23.6 PCT
            I
            I
            I
     25.    ***** (     2)   1.8 PCT
            I
            I
            I
     36.    *** (     1)   0.9 PCT
            I
            I
            I
     37.    *** (     1)   0.9 PCT
            I
            I
            I
     44.    *** (     1)   0.9 PCT
            I
            I
            I
     48.    *** (     1)   0.9 PCT
            I
            I
            I
     50.    ******* (     3)   2.7 PCT
            I
            I
            I
     88.    ***** (     2)   1.8 PCT
            I
            I
            I
    100.    ***** (     2)   1.8 PCT
            I
            I
            I
    150.    *** (     1)   0.9 PCT
            I
            I
            I
    200.    *** (     1)   0.9 PCT
            I
            I
            I
    600.    *** (     1)   0.9 PCT
            I
            I
            I
      0.    ***** (     2)   1.8 PCT
 (MISSING)  I
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0         5        10        15        20        25        30        35        40        45        50
            FREQUENCY
STATISTICS..

MEAN            26.759          STD ERROR        6.012          MEDIAN          12.237

MODE            24.000          STD DEV         62.474          VARIANCE      3902.971

KURTOSIS        64.427          SKEWNESS         7.558          RANGE          596.000

MINIMUM          4.000          MAXIMUM        600.000

VALID   OBSERVATIONS -       108
MISSING OBSERVATIONS -         2
```

```
FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

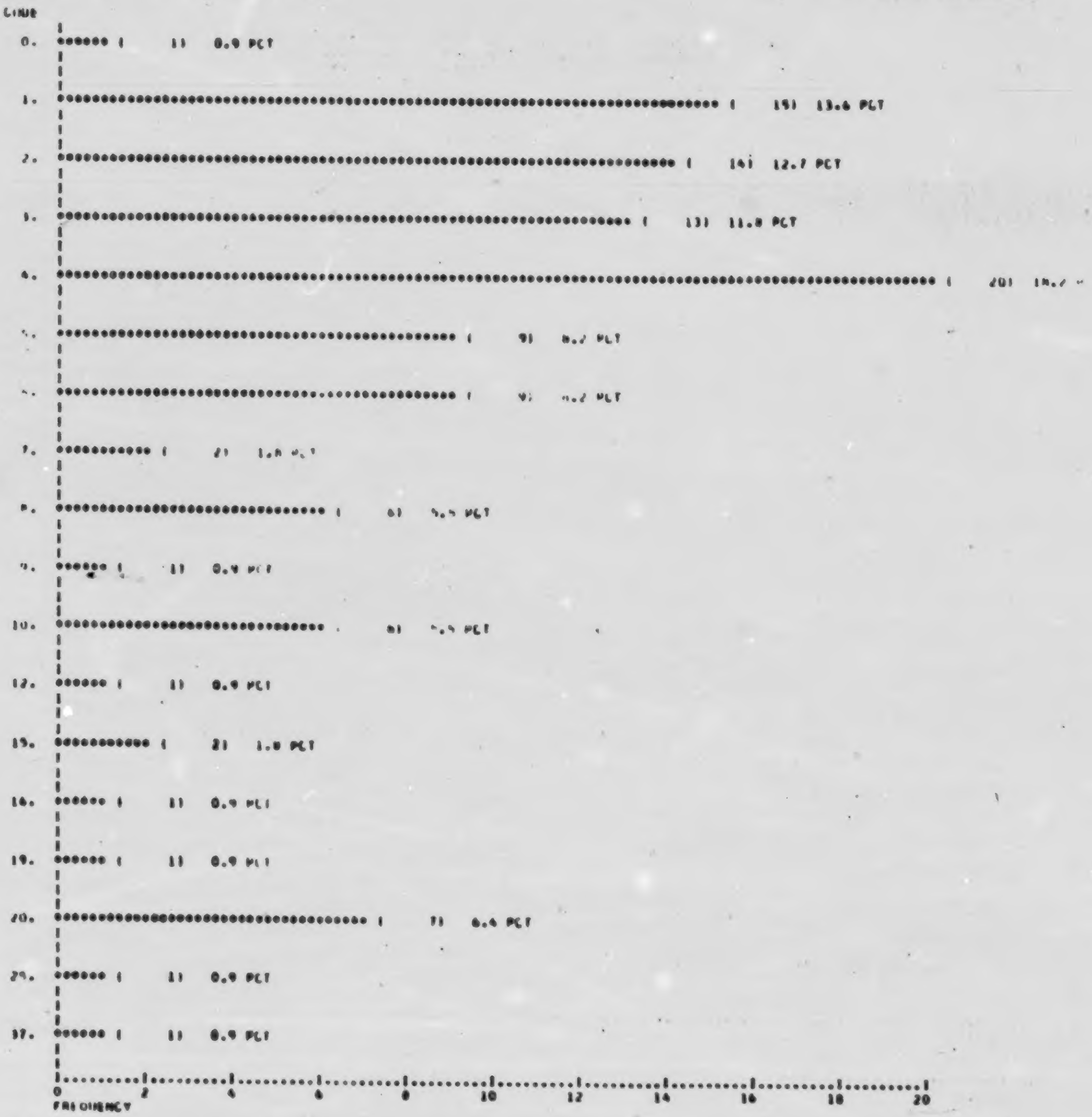
VARIABLE   CRSEAGE    AGE OF COURSE IN YEARS

VALUE LABEL                              VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                 FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                             (PERCENT)   (PERCENT)   (PERCENT)
                                         - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                           0.        1          0.9         0.9         0.9
                                           1.       15         13.6        13.6        14.5
                                           2.       14         12.7        12.7        27.3
                                           3.       13         11.8        11.8        39.1
                                           4.       20         18.2        18.2        57.3
                                           5.        9          8.2         8.2        65.5
                                           6.        9          8.2         8.2        73.6
                                           7.        2          1.8         1.8        75.5
                                           8.        6          5.5         5.5        80.9
                                           9.        1          0.9         0.9        81.8
                                          10.        6          5.5         5.5        87.3
                                          12.        1          0.9         0.9        88.2
                                          13.        2          1.8         1.8        90.0
                                          16.        1          0.9         0.9        90.9
                                          19.        1          0.9         0.9        91.8
                                          20.        7          6.4         6.4        98.2
                                          26.        1          0.9         0.9        99.1
                                          37.        1          0.9         0.9       100.0
                                                 --------    --------    --------    --------
                                         TOTAL     110        100.0       100.0       100.0
```

```
FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAN (CREATION DATE = 08/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   CRSEAGE    AGE OF COURSE IN YEARS
```



```
STATISTICS..

MEAN           6.100          STD ERROR      0.587          MEDIAN        4.100
MODE           4.000          STD DEV        6.157          VARIANCE     37.907
KURTOSIS       5.829          SKEWNESS       2.229          RANGE        37.000
MINIMUM        0.0            MAXIMUM       37.000

VALID   OBSERVATIONS -      110
MISSING OBSERVATIONS -        6
```

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FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   QTACTRL    FUNCTION CONTROLLING COURSE QUOTAS

VALUE LABEL                                    VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                       FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                   (PERCENT)   (PERCENT)   (PERCENT)
                                               - - - - - - - - - - - - - - - - - - - - - - - - - - -

NORFOLK                                           1.        76        69.1        69.1        69.1

BUPERS                                            2.        34        30.9        30.9       100.0
                                                         -------     -------     -------     -------
                                               TOTAL       110       100.0       100.0       100.0
```

```
VARIABLE   QTACTRL    FUNCTION CONTROLLING COURSE QUOTAS

      CODE
          I
       1. **************************************************************************** I    76)  69.1 PCT
          I     NORFOLK
          I
          I
       2. ********************************** I    34)  30.9 PCT
          I     BUPERS
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        10        20        30        40        50        60        70        80        90       100
          FREQUENCY

STATISTICS...

MEAN              1.309            STD ERROR        0.044              MEDIAN           0.0

MODE              1.000            STD DEV          0.464              VARIANCE         0.216

KURTOSIS         -1.317            SKEWNESS         0.836              RANGE            1.000

MINIMUM           1.000            MAXIMUM          2.000

VALID   OBSERVATIONS -        110
MISSING OBSERVATIONS -          0
```

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FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECMAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   MOUNGR     CCRM LOCATED AT FTC NORVA

VALUE LABEL                                    VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                       FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                   (PERCENT)   (PERCENT)   (PERCENT)
                                               - - - - - - - - - - - - - - - - - - - - - - - - - - -

NOT NORFOLK                                      0.        29         26.4        26.4        26.4

NORFOLK                                          1.        81         73.6        73.6       100.0
                                                       -------     -------     -------     -------
                                               TOTAL      110        100.0       100.0       100.0
```

```
VARIABLE   MOUNGR     CCRM LOCATED AT FTC NORVA

     CODE
             I
       0.    ***************************** I     (29)   26.4 PCT
             I     NOT NORFOLK
             I
             I
       1.    ********************************************************************************* I     (81)   73.6 PCT
             I     NORFOLK
             I
             I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
             0        10        20        30        40        50        60        70        80        90       100
             FREQUENCY

STATISTICS..

MEAN           0.736          STD ERROR      0.042          MEDIAN         0.0
MODE           1.000          STD DEV        0.443          VARIANCE       0.196
KURTOSIS      -0.849          SKEWNESS       1.073          RANGE          1.000
MINIMUM        0.0            MAXIMUM        1.000

VALID   OBSERVATIONS -        110
MISSING OBSERVATIONS -          0
```

```
FLETRACEN NORVA - COURSE STATISTICS

FILE    CRSFCHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE    PRIORITY    PRIORITY VALUE FOR COURSE

VALUE LABEL                                  VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                     FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                 (PERCENT)   (PERCENT)   (PERCENT)
                                             - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                               8.        1          0.9         1.1         1.1

                                              10.        3          2.7         3.3         4.3

                                              12.        2          1.8         2.2         6.5

                                              14.        6          5.5         6.5        13.0

                                              16.        4          3.6         4.3        17.4

                                              18.        1          0.9         1.1        18.5

                                              20.       12         10.9        13.0        31.5

                                              22.       15         13.6        16.3        47.8

                                              24.        7          6.4         7.6        55.4

                                              26.       11         10.0        12.0        67.4

                                              28.       11         10.0        12.0        79.3

LOW                                           30.        9          8.2         9.8        89.1

LOW                                           32.       10          9.1        10.9       100.0

                                               0.       18         16.4      MISSING      100.0
                                                     -------     -------     -------     -------
                                           TOTAL       110        100.0       100.0       100.0
```

```
PLETPALIN NORVA - COURSE STATISTICS
FILE   CRSELMAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   PRIORITY   PRIORITY VALUE FOR COURSE

      CODE
            I
       8.   ***** I     1)   0.9 PCT
            I
            I
      10.   *************** I     3)   2.7 PCT
            I
            I
      12.   ********** I     2)   1.8 PCT
            I
            I
      14.   ****************************** I     6)   5.5 PCT
            I
            I
      16.   ******************** I     4)   3.6 PCT
            I
            I
      18.   ***** I     1)   0.9 PCT
            I
            I
      20.   ************************************************************ I    12)  10.9 PCT
            I
            I
      22.   *************************************************************************** I    15)  13.6 PCT
            I
            I
      24.   *********************************** I     7)   6.4 PCT
            I
            I
      26.   ******************************************************* I    11)  10.0 PCT
            I
            I
      28.   ******************************************************* I    11)  10.0 PCT
            I
            I
      30.   ********************************************* I     9)   8.2 PCT
            I    LOW
            I
      32.   ************************************************** I    10)   9.1 PCT
            I    LOW
            I
       0.   ****************************************************************************************** I    18)  16.4 PCT
  (MISSING) I
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0         2         4         6         8        10        12        14        16        18        20
            FREQUENCY

STATISTICS..

MEAN          23.370        STD ERROR     0.439        MEDIAN       23.571
MODE          22.000        STD DEV       4.134        VARIANCE     17.621
KURTOSIS      -0.497        SKEWNESS     -0.507        RANGE        24.000
MINIMUM        8.000        MAXIMUM      32.000

VALID   OBSERVATIONS -        92
MISSING OBSERVATIONS -        18
```

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FLETRACEN NORVA - COURSE STATISTICS

FILE    CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   CRSETYPE   TYPE OF COURSE

VALUE LABEL                                      VALUE   ABSOLUTE     RELATIVE    ADJUSTED   CUMULATIVE
                                                         FREQUENCY   FREQUENCY   FREQUENCY    ADJ FREQ
                                                                     (PERCENT)   (PERCENT)   (PERCENT)
                                                 - - - - - - - - - - - - - - - - - - - - - - - - - - -

LECTURE-LABORATORY                                 1.        91        82.7        82.7        82.7

ALL LECTURE                                        2.        14        12.7        12.7        95.5

TEAM TRAINING                                      3.         3         2.7         2.7        98.2

INDIV LEARNING                                     4.         1         0.9         0.9        99.1

OTHER                                              5.         1         0.9         0.9       100.0

                                                   0.         0         0.0      MISSING      100.0
                                                          -------     -------     -------     -------
                                                 TOTAL      110       100.0       100.0       100.0
```

```
VARIABLE   CRSETYPE   TYPE OF COURSE

     CODE
           I
       1.  ******************************************************************************************** (   91)  82.7 PCT
           I    LECTURE-LABORATORY
           I
           I
       2.  *************** (   14)  12.7 PCT
           I    ALL LECTURE
           I
           I
       3.  **** (    3)   2.7 PCT
           I    TEAM TRAINING
           I
           I
       4.  ** (    1)   0.9 PCT
           I    INDIV LEARNING
           I
           I
       5.  ** (    1)   0.9 PCT
           I    OTHER
           I
           I
       0.  * (    0)   0.0 PCT
  (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        10        20        30        40        50        60        70        80        90       100
           FREQUENCY

STATISTICS..

MEAN           1.245          STD ERROR      0.061            MEDIAN        0.0

MODE           1.000          STD DEV        0.638            VARIANCE      0.407

KURTOSIS      13.178          SKEWNESS       3.360            RANGE         4.000

MINIMUM        1.000          MAXIMUM        5.000

VALID   OBSERVATIONS -         110
MISSING OBSERVATIONS -           0
```

```
FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   PCTLAB      PERCENT OF COURSE IN LABORATORY

VALUE LABEL                                    VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                       FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                   (PERCENT)   (PERCENT)   (PERCENT)
                                               - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                  0.       15        13.6        13.6        13.6
                                                  7.        1         0.9         0.9        14.5
                                                 12.        2         1.8         1.8        16.4
                                                 20.        1         0.9         0.9        17.3
                                                 21.        1         0.9         0.9        18.2
                                                 23.        1         0.9         0.9        19.1
                                                 25.        3         2.7         2.7        21.8
                                                 26.        1         0.9         0.9        22.7
                                                 30.        4         3.6         3.6        26.4
                                                 33.        2         1.8         1.8        28.2
                                                 35.        3         2.7         2.7        30.9
                                                 38.        1         0.9         0.9        31.8
                                                 40.        7         6.4         6.4        38.2
                                                 41.        1         0.9         0.9        39.1
                                                 47.        1         0.9         0.9        40.0
                                                 49.        1         0.9         0.9        40.9
                                                 50.        9         8.2         8.2        49.1
                                                 52.        2         1.8         1.8        50.9
                                                 54.        1         0.9         0.9        51.8
                                                 55.        2         1.8         1.8        53.6
                                                 56.        1         0.9         0.9        54.5
                                                 60.       36        32.7        32.7        87.3
                                                 65.        2         1.8         1.8        89.1
                                                 68.        1         0.9         0.9        90.9
                                                 70.        1         0.9         0.9        91.8
                                                 75.        4         3.6         3.6        95.5
                                                 80.        5         4.5         4.5       100.0
                                                       -------     -------     -------     -------
                                               TOTAL      110       100.0       100.0       100.0
```

```
FLETRACEN NORVA - COURSE STATISTICS
FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   PCTLAB     PERCENT OF COURSE IN LABORATORY

      CODE
             I
         0.  ******************************* I     15)  13.6 PCT
             I
             I
         7.  *** I     1)   0.9 PCT
             I
             I
        12.  ***** I     2)   1.8 PCT
             I
             I
        20.  *** I     1)   0.9 PCT
             I
             I
        21.  *** I     1)   0.9 PCT
             I
             I
        24.  *** I     1)   0.9 PCT
             I
             I
        25.  ******* I     3)   2.7 PCT
             I
             I
        28.  *** I     1)   0.9 PCT
             I
             I
        30.  ********* I     4)   3.6 PCT
             I
             I
        33.  ***** I     2)   1.8 PCT
             I
             I
        35.  ******* I     3)   2.7 PCT
             I
             I
        38.  *** I     1)   0.9 PCT
             I
             I
        40.  *************** I     7)   6.4 PCT
             I
             I
        43.  *** I     1)   0.9 PCT
             I
             I
        47.  *** I     1)   0.9 PCT
             I
             I
        49.  *** I     1)   0.9 PCT
             I
             I
        50.  ******************* I     9)   8.2 PCT
             I
             I
        52.  ***** I     2)   1.8 PCT
             I
             I
        54.  *** I     1)   0.9 PCT
             I
             I
        55.  ***** I     2)   1.8 PCT
             I
             I
        56.  *** I     1)   0.9 PCT
             I
             I
        60.  ************************************************************************* I    36)  32.7 PCT
             I
             I
        65.  ***** I     2)   1.8 PCT
             I
             I
        66.  *** I     1)   0.9 PCT
             I
             I
        68.  *** I     1)   0.9 PCT
             I
             I
```

```
FLETRACEN NORVA - COURSE STATISTICS

         I
   70.   *** I     1    0.9 PCT
         I
         I
         I
   75.   ********* I     4    3.6 PCT
         I
         I
         I
   80.   *********** I     5    4.5 PCT
         I
         I
         I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
         0         5        10        15        20        25        30        35        40        45        50
         FREQUENCY

STATISTICS...

MEAN            44.655          STD ERROR       2.235           MEDIAN          52.000
MODE            60.000          STD DEV        23.444           VARIANCE       549.642
KURTOSIS        -0.941          SKEWNESS       -0.750           RANGE           80.000
MINIMUM          0.0            MAXIMUM        80.000

VALID    OBSERVATIONS -       110
MISSING  OBSERVATIONS -         0
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FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   CHGABLTY   DEGREE OF COURSE REVISION

VALUE LABEL                         VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                            FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                        (PERCENT)   (PERCENT)   (PERCENT)
                                    - - - - - - - - - - - - - - - - - - - - - - - - - - -

NO REVISION RQD                       1.       11         10.0        10.0        10.0

MINIMAL                               2.        4          3.6         3.6        13.6

MINOR                                 3.        7          6.4         6.4        20.0

MINOR ANNUAL                          4.       17         15.5        15.5        35.5

MINOR ON-GOING                        5.       32         29.1        29.1        64.5

MAJOR ANNUAL                          7.        3          2.7         2.7        67.3

MAJOR ON-GOING                        8.       12         10.9        10.9        98.2

EXTENSIVE ON-GOING                    9.        2          1.8         1.8       100.0

                                      0.        0          0.0      MISSING      100.0
                                            -------     -------     -------     -------
                                    TOTAL     110        100.0       100.0       100.0
```

```
FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   CHGABLTY   DEGREE OF COURSE REVISION

     CODE
              I
        1.    ********************** I      11)  10.0 PCT
              I     NO REVISION REQ
              I
              I
        2.    ******** I      4)   3.6 PCT
              I     MINIMAL
              I
              I
        3.    ************** I      7)   6.4 PCT
              I     MINOR
              I
              I
        4.    ********************************** I     17)  15.5 PCT
              I     MINOR ANNUAL
              I
              I
        5.    **************************************************************** I     32)  29.1 PCT
              I     MINOR ON-GOING
              I
              I
        7.    ****** I      3)   2.7 PCT
              I     MAJOR ANNUAL
              I
              I
        8.    ******************************************************************** I     34)  30.9 PCT
              I     MAJOR ON-GOING
              I
              I
        9.    **** I      2)   1.8 PCT
              I     EXTENSIVE ON-GOING
              I
              I
        0.    * I      0)   0.0 PCT
   (MISSING)  I
              I
              I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
              0         5        10        15        20        25        30        35        40        45        50
              FREQUENCY




STATISTICS..

MEAN            5.264          STD ERROR       0.224          MEDIAN          5.250

MODE            8.000          STD DEV         2.345          VARIANCE        5.499

KURTOSIS       -0.967          SKEWNESS       -0.208          RANGE           8.000

MINIMUM         1.000          MAXIMUM         9.000

VALID   OBSERVATIONS -        110
MISSING OBSERVATIONS -          0
```

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FLETRACEN NORVA - COURSE STATISTICS

FILE   LRSECHAR (CREATION DATE = 09/02/74) - ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   GRADTYPE   TYPE OF GRADING SYSTEM

VALUE LABEL                         VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                           FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                       (PERCENT)   (PERCENT)   (PERCENT)
                                   * * * * * * * * * * * * * * * * * * * * * * * * * * * *

NON-GRADED                            1.        14        12.7        12.7        12.7

PASS-FAIL                             2.        31        28.2        28.2        40.9

NUMERIC                               3.        65        59.1        59.1       100.0

                                      0.         0         0.0     MISSING       100.0
                                           -------     -------     -------     -------
                                    TOTAL      110       100.0       100.0       100.0
```

```
VARIABLE   GRADTYPE   TYPE OF GRADING SYSTEM

      CODE
            I
        1.  ************** (    14)  12.7 PCT
            I    NON-GRADED
            I
            I
        2.  ******************************* (    31)  28.2 PCT
            I    PASS-FAIL
            I
            I
        3.  ***************************************************************** (    65)  59.1 PCT
            I    NUMERIC
            I
            I
        0.  * (     0)   0.0 PCT
 (MISSING)  I
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0        10        20        30        40        50        60        70        80        90       100
            FREQUENCY

STATISTICS..

MEAN             2.464          STD ERROR      0.068          MEDIAN        [illegible]
MODE             3.000          STD DEV        0.712          VARIANCE       0.507
KURTOSIS        -0.669          SKEWNESS      -0.951          RANGE          2.000
MINIMUM          1.000          MAXIMUM        3.000

VALID  OBSERVATIONS -        110
MISSING OBSERVATIONS -         0
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FLETRALEN NORVA - COURSE STATISTICS

FILE    INSICMAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE    PASSLEVL    MINIMUM STUDENT PASS LEVEL

VALUE LABEL                                        VALUE    ABSOLUTE    RELATIVE   ADJUSTED   CUMULATIVE
                                                           FREQUENCY   FREQUENCY  FREQUENCY    ADJ FREQ
                                                                       (PERCENT)  (PERCENT)   (PERCENT)
                                                   - - -  - - - - - - - - - - - - - - - - - - - - - - -

                                                      0.       43        39.1       39.1        39.1

                                                     20.        1         0.9        0.9        40.0

                                                     25.       20        18.2       18.2        58.2

                                                     28.        2         1.8        1.8        60.0

                                                     63.       25        22.7       22.7        82.7

                                                     70.        3         2.7        2.7        85.5

                                                     75.       16        14.5       14.5       100.0
                                                           -------    -------    -------     -------
                                                  TOTAL       110       100.0      100.0       100.0
```

```
VARIABLE    PASSLEVL    MINIMUM STUDENT PASS LEVEL

     CODE
           I
       0.  ************************************************************************************** I    43)  39.1 PCT
           I
           I
      20.  *** I    1)  0.9 PCT
           I
           I
      25.  **************************************** I    20)  18.2 PCT
           I
           I
      28.  ***** I    2)  1.8 PCT
           I
           I
      63.  ************************************************** I    25)  22.7 PCT
           I
           I
      70.  ******* I    3)  2.7 PCT
           I
           I
      75.  ******************************** I    16)  14.5 PCT
           I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0         5        10        15        20        25        30        35        40        45        50
           FREQUENCY

STATISTICS..

MEAN           32.374          STD ERROR       2.933           MEDIAN         24.700

MODE            0.0            STD DEV        30.757           VARIANCE      945.998

KURTOSIS       -1.674          SKEWNESS        0.205           RANGE          75.000

MINIMUM         0.0            MAXIMUM        75.000

VALID   OBSERVATIONS -        110
MISSING OBSERVATIONS -          0
```

```
FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   PCTUTIL    RECODED INTO 5-STEP INTERVALS

VALUE LABEL                                  VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                     FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                 (PERCENT)   (PERCENT)   (PERCENT)
                                             - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                               10.       1          0.9         0.9         0.9

                                               15.       1          0.9         0.9         1.8

                                               20.       1          0.9         0.9         2.7

                                               25.       5          4.5         4.5         7.3

                                               30.       4          3.6         3.6        10.9

                                               35.       3          2.7         2.7        13.6

                                               40.       3          2.7         2.7        16.4

                                               45.       6          5.5         5.5        21.8

                                               50.       7          6.4         6.4        28.2

                                               55.       7          6.4         6.4        34.5

                                               60.       8          7.3         7.3        41.8

                                               65.       8          7.3         7.3        49.1

                                               70.       8          7.3         7.3        56.4

                                               75.       8          7.3         7.3        63.6

                                               80.      13         11.8        11.8        75.5

                                               85.       4          3.6         3.6        79.1

                                               90.       6          5.5         5.5        84.5

                                               95.       7          6.4         6.4        90.9

                                              100.       3          2.7         2.7        93.6

                                              105.       4          3.6         3.6        97.3

                                              120.       1          0.9         0.9        98.2

                                              135.       1          0.9         0.9        99.1

                                              145.       1          0.9         0.9       100.0

                                                0.       0          0.0       MISSING     100.0
                                                      -------     -------     -------     -------
                                             TOTAL      110        100.0       100.0       100.0
```

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FLETRACEN NORVA - COURSE STATISTICS

FILE    CRSECHAR (CREATION DATE = 09/02/76)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   PCTUTIL    RECODED INTO 5 STEP INTERVAL.

      CODE
             I
      10.    ***** (     1)   0.9 PCT
             I
             I
      15.    ***** (     1)   0.9 PCT
             I
             I
      20.    ***** (     1)   0.9 PCT
             I
             I
      25.    ************************* (     5)   4.5 PCT
             I
             I
      30.    ******************** (     4)   3.6 PCT
             I
             I
      35.    *************** (     3)   2.7 PCT
             I
             I
      40.    *************** (     3)   2.7 PCT
             I
             I
      45.    ****************************** (     6)   5.5 PCT
             I
             I
      50.    *********************************** (     7)   6.4 PCT
             I
             I
      55.    *********************************** (     7)   6.4 PCT
             I
             I
      60.    **************************************** (     8)   7.3 PCT
             I
             I
      65.    **************************************** (     8)   7.3 PCT
             I
             I
      70.    **************************************** (     8)   7.3 PCT
             I
             I
      75.    **************************************** (     8)   7.3 PCT
             I
             I
      80.    ***************************************************************** (    13)  11.8 PCT
             I
             I
      85.    ******************** (     4)   3.6 PCT
             I
             I
      90.    ****************************** (     6)   5.5 PCT
             I
             I
      95.    *********************************** (     7)   6.4 PCT
             I
             I
     100.    *************** (     3)   2.7 PCT
             I
             I
     105.    ******************** (     4)   3.6 PCT
             I
             I
     120.    ***** (     1)   0.9 PCT
             I
             I
     135.    ***** (     1)   0.9 PCT
             I
             I
     185.    ***** (     1)   0.9 PCT
             I
             I
       0.    * (     0)   0.0 PCT
 (MISSING)   I
             I
             I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
             0         2         4         6         8        10        12        14        16        18        20
             FREQUENCY
STATISTICS..

MEAN             67.580          STD ERROR        2.537          MEDIAN          68.125

MODE             80.000          STD DEV         26.611          VARIANCE       708.142

KURTOSIS          2.380          SKEWNESS         0.649          RANGE          175.000

MINIMUM          10.000          MAXIMUM        185.000

VALID   OBSERVATIONS -      110
MISSING OBSERVATIONS -        0
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FILTRATED NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/76)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   NECAWARD   COURSE AWARDS NEC

VALUE LABEL                                    VALUE    ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                        FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                    (PERCENT)   (PERCENT)   (PERCENT)
                                              - - - - - - - - - - - - - - - - - - - - - - - - - - - -

NO NEC AWARDED                                   0.        74         67.3        67.3        67.3

NEC RECOMMENDED                                  1.        36         32.7        32.7       100.0
                                                        -------     -------     -------     -------
                                               TOTAL       110        100.0       100.0       100.0
```

```
VARIABLE   NECAWARD   COURSE AWARDS NEC

     CODE
           I
       0.  ************************************************************************** I    74)  67.3 PCT
           I     NO NEC AWARDED
           I
           I
       1.  ************************************ I    36)  32.7 PCT
           I     NEC RECOMMENDED
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        10        20        30        40        50        60        70        80        90       100
           FREQUENCY

STATISTICS..

MEAN            0.327           STD ERROR        0.045            MEDIAN          0.0

MODE            0.0             STD DEV          0.471            VARIANCE        0.222

KURTOSIS       -1.458           SKEWNESS         0.736            RANGE           1.000

MINIMUM         0.0             MAXIMUM          1.000

VALID   OBSERVATIONS -        110
MISSING OBSERVATIONS -          0
```

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FLETRACEN NORVA   COURSE STATISTICS

FILE   CRSEINAM (CREATION DATE = 09/02/76)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   PCTNOSHO   PCT OF NO SHOWS

VALUE LABEL                                   VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                      FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                  (PERCENT)   (PERCENT)   (PERCENT)
                                              - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                0.       40         36.4        36.4        36.4
                                                1.        1          0.9         0.9        37.3
                                          [illegible]     1          0.9         0.9        38.2
                                                4.        1          0.9         0.9        39.1
                                                5.        3          2.7         2.7        41.8
                                                6.        2          1.8         1.8        43.6
                                                7.        4          3.6         3.6        47.3
                                                8.        1          0.9         0.9        48.2
                                                9.        3          2.7         2.7        50.9
                                               10.        3          2.7         2.7        53.6
                                               11.        4          3.6         3.6        57.3
                                               13.        2          1.8         1.8        59.1
                                               14.        5          4.5         4.5        63.6
                                               15.        2          1.8         1.8        65.5
                                               16.        4          3.6         3.6        69.1
                                               17.        5          4.5         4.5        73.6
                                               18.        6          5.5         5.5        79.1
                                               19.        4          3.6         3.6        82.7
                                               20.        3          2.7         2.7        85.5
                                               21.        1          0.9         0.9        86.4
                                               22.        1          0.9         0.9        87.3
                                               24.        2          1.8         1.8        89.1
                                               25.        3          2.7         2.7        91.8
                                               26.        1          0.9         0.9        92.7
                                               27.        3          2.7         2.7        95.5
                                               29.        1          0.9         0.9        96.4
                                               36.        1          0.9         0.9        97.3
                                               39.        1          0.9         0.9        98.2
                                               51.        1          0.9         0.9        99.1
                                               75.        1          0.9         0.9       100.0
                                               99.        0          0.0      MISSING      100.0
                                                       -------     -------     -------     -------
                                            TOTAL       110        100.0       100.0       100.0
```

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FLTTRACEN NORVA - COURSE STATISTICS                                              ...
FILE   UNSICHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   PCTNOSHO   PCT OF NO SHOWS
     CODE
            I
        0.  ********************************************************************************* (   40)  36.4 PCT
            I
            I
            I
        1.  *** (    1)   0.9 PCT
            I
            I
            I
  [illegible]  *** (    1)   0.9 PCT
            I
            I
            I
        4.  *** (    1)   0.9 PCT
            I
            I
            I
        5.  ******* (     3)   2.7 PCT
            I
            I
            I
        6.  ***** (     2)   1.8 PCT
            I
            I
            I
        7.  ********* (     4)   3.6 PCT
            I
            I
            I
        8.  *** (    1)   0.9 PCT
            I
            I
            I
        9.  ******* (     3)   2.7 PCT
            I
            I
            I
       10.  ******* (     3)   2.7 PCT
            I
            I
            I
       11.  ********* (     4)   3.6 PCT
            I
            I
            I
  [illegible]  ***** (     2)   1.8 PCT
            I
            I
            I
       14.  *********** (     5)   4.5 PCT
            I
            I
            I
       15.  ***** (     2)   1.8 PCT
            I
            I
            I
       16.  ********* (     4)   3.6 PCT
            I
            I
            I
       17.  *********** (     5)   4.5 PCT
            I
            I
            I
       18.  ************* (     6)   5.5 PCT
            I
            I
            I
       19.  ********* (     4)   3.6 PCT
            I
            I
            I
       20.  ******* (     3)   2.7 PCT
            I
            I
            I
       21.  *** (    1)   0.9 PCT
            I
            I
            I
       22.  *** (    1)   0.9 PCT
            I
            I
            I
       24.  ***** (     2)   1.8 PCT
            I
            I
            I
       25.  ******* (     3)   2.7 PCT
            I
            I
            I
       26.  *** (    1)   0.9 PCT
            I
            I
            I
       27.  ******* (     3)   2.7 PCT
            I
            I
```

```
PIETRACEN NORVA - COURSE STATISTICS

                I
        29.   *** (       1)   0.9 PCT
                I
                I
        36.   *** (       1)   0.9 PCT
                I
                I
        39.   *** (       1)   0.9 PCT
                I
                I
        51.   *** (       1)   0.9 PCT
                I
                I
        75.   *** (       1)   0.9 PCT
                I
                I
        99.   * (       0)   0.0 PCT
   (MISSING)  I
              I
              I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
              0         5        10        15        20        25        30        35        40        45        50
              FREQUENCY

STATISTICS..

MEAN            10.845          STD ERROR       1.157           MEDIAN          9.167
MODE             0.0            STD DEV        12.131           VARIANCE      147.159
KURTOSIS         6.313          SKEWNESS        1.855           RANGE          75.000
MINIMUM          0.0            MAXIMUM        75.000

VALID   OBSERVATIONS -        110
MISSING OBSERVATIONS -          0
```

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FLTTRACEN NORVA    COURSE STATISTICS

FILE    CASELMAN (CREATION DATE = 09/02/74)    ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE    BACKLOG    ENROLLMENT BACKLOG IN WEEKS    PCTSUBQT

VALUE LABEL                                     VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                        FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                    (PERCENT)   (PERCENT)   (PERCENT)
                                              - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                   0.       28        25.5        45.2        45.2

                                                   2.        4         3.6         6.5        51.6

                                                   4.        5         4.5         8.1        59.7

                                                   5.        3         2.7         4.8        64.5

                                                   6.        6         5.5         9.7        74.2

                                                   7.        1         0.9         1.6        75.8

                                                   8.        3         2.7         4.8        80.6

                                                   9.        1         0.9         1.6        82.3

                                                  10.        1         0.9         1.6        83.9

                                                  12.        4         3.6         6.5        90.3

                                                  18.        1         0.9         1.6        91.9

                                                  19.        1         0.9         1.6        93.5

                                                  20.        1         0.9         1.6        95.2

                                                  24.        1         0.9         1.6        96.8

                                                  27.        1         0.9         1.6        98.4

                                                  30.        1         0.9         1.6       100.0

                                                  99.       48        43.6     MISSING       100.0
                                                        -------     -------     -------     -------
                                                TOTAL      110       100.0       100.0       100.0
```

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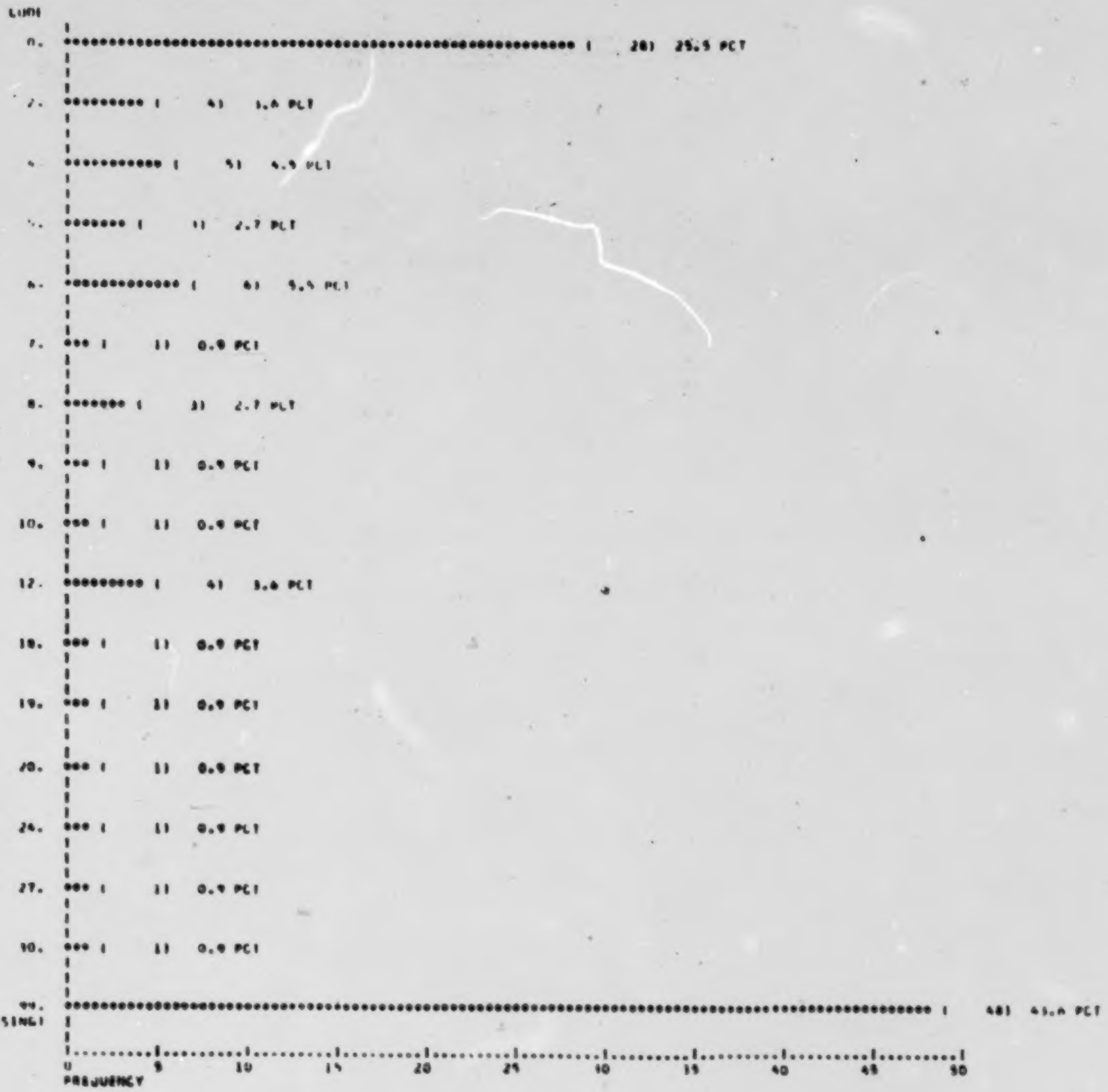

```
FLETRACEN NORVA - COURSE STATISTICS
FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   BACKLOG   ENROLLMENT BACKLOG IN WEEKS    PCTSUBQT
     CODE
            I
       0.   ******************************************************** I   28)  25.5 PCT
            I
            I
            I
       2.   ******** I    4)   3.6 PCT
            I
            I
            I
       4.   ********** I    5)   4.5 PCT
            I
            I
            I
       5.   ****** I    3)   2.7 PCT
            I
            I
            I
       6.   ************ I    6)   5.5 PCT
            I
            I
            I
       7.   ** I    1)   0.9 PCT
            I
            I
            I
       8.   ****** I    3)   2.7 PCT
            I
            I
            I
       9.   ** I    1)   0.9 PCT
            I
            I
            I
      10.   ** I    1)   0.9 PCT
            I
            I
            I
      12.   ******** I    4)   3.6 PCT
            I
            I
            I
      18.   ** I    1)   0.9 PCT
            I
            I
            I
      19.   ** I    1)   0.9 PCT
            I
            I
            I
      20.   ** I    1)   0.9 PCT
            I
            I
            I
      24.   ** I    1)   0.9 PCT
            I
            I
            I
      27.   ** I    1)   0.9 PCT
            I
            I
            I
      30.   ** I    1)   0.9 PCT
            I
            I
            I
      99.   ************************************************************************************************ I   48)  43.6 PCT
 (MISSING)  I
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0         5        10        15        20        25        30        35        40        45        50
            FREQUENCY
STATISTICS..

MEAN           5.081          STD ERROR      0.902          MEDIAN         2.500

MODE           0.0            STD DEV        7.100          VARIANCE      50.405

KURTOSIS       2.829          SKEWNESS       1.790          RANGE         30.000

MINIMUM        0.0            MAXIMUM       30.000

VALID   OBSERVATIONS -        62
MISSING OBSERVATIONS -        48
```

```
PLETRACIN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   PCTSUBQT

VALUE LABEL                                VALUE  ABSOLUTE   RELATIVE   ADJUSTED  CUMULATIVE
                                                  FREQUENCY  FREQUENCY  FREQUENCY  ADJ FREQ
                                                             (PERCENT)  (PERCENT)  (PERCENT)
                                           - - - - - - - - - - - - - - - - - - - - - - - - -

                                             0.       38       34.5       40.0       40.0

                                             1.        3        2.7        3.2       43.2

                                             2.       13       11.8       13.7       56.8

                                             3.        2        1.8        2.1       58.9

                                             4.        1        0.9        1.1       60.0

                                             5.        8        7.3        8.4       68.4

                                             6.        1        0.9        1.1       69.5

                                             8.        1        0.9        1.1       70.5

                                             9.        1        0.9        1.1       71.6

                                            10.       15       13.6       15.8       87.4

                                            11.        1        0.9        1.1       88.4

                                            12.        1        0.9        1.1       89.5

                                            13.        3        2.7        3.2       92.6

                                            15.        1        0.9        1.1       93.7

                                            16.        1        0.9        1.1       94.7

                                            20.        1        0.9        1.1       95.8

                                            25.        1        0.9        1.1       96.8

                                            34.        1        0.9        1.1       97.9

                                            50.        1        0.9        1.1       98.9

                                            98.        1        0.9        1.1      100.0

                                            99.       15       13.6    MISSING      100.0
                                                  -------    -------    -------    -------
                                          TOTAL      110      100.0      100.0      100.0
```

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FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 08/02/78)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   PLTSUBOT

   CODE
          I
    0.    ***************************************************************************** I    38)  34.5 PCT
          I
          I
          I
    1.    ******* I     3)   2.7 PCT
          I
          I
          I
    2.    *************************** I    13)  11.8 PCT
          I
          I
          I
    3.    ***** I     2)   1.8 PCT
          I
          I
          I
    4.    *** I     1)   0.9 PCT
          I
          I
          I
    5.    ***************** I     8)   7.3 PCT
          I
          I
          I
    6.    *** I     1)   0.9 PCT
          I
          I
          I
    8.    *** I     1)   0.9 PCT
          I
          I
          I
    9.    *** I     1)   0.9 PCT
          I
          I
          I
   10.    ******************************* I    15)  13.6 PCT
          I
          I
          I
   11.    *** I     1)   0.9 PCT
          I
          I
          I
   12.    *** I     1)   0.9 PCT
          I
          I
          I
   13.    ******* I     3)   2.7 PCT
          I
          I
          I
   15.    *** I     1)   0.9 PCT
          I
          I
          I
   16.    *** I     1)   0.9 PCT
          I
          I
          I
   20.    *** I     1)   0.9 PCT
          I
          I
          I
   25.    *** I     1)   0.9 PCT
          I
          I
          I
   36.    *** I     1)   0.9 PCT
          I
          I
          I
   50.    *** I     1)   0.9 PCT
          I
          I
          I
   90.    *** I     1)   0.9 PCT
          I
          I
          I
   99.    ******************************* I    15)  13.6 PCT
(MISSING) I
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0         5        10        15        20        25        30        35        40        45        50
          FREQUENCY

STATISTICS..

MEAN            6.042          STD ERROR      1.260          MEDIAN       2.000

MODE            0.0            STD DEV       12.282          VARIANCE   150.849

KURTOSIS       33.058          SKEWNESS       5.196          RANGE       90.000

MINIMUM         0.0            MAXIMUM       90.000

VALID   OBSERVATIONS -        95
MISSING OBSERVATIONS -        15
```

243

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FLETRACEN NORVA - COURSE STATISTICS

FILE    CRSECHAR (CREATION DATE = 09/02/74)    ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE    PCTFAIL    PCT OF STUDENTS FAILING

VALUE LABEL                              VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                 FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                             (PERCENT)   (PERCENT)   (PERCENT)
                                         - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                          0.        67         60.9        60.9        60.9
                                          1.         2          1.8         1.8        62.7
                                          2.         6          5.5         5.5        68.2
                                          3.         4          3.6         3.6        71.8
                                          4.         6          5.5         5.5        77.3
                                          5.         1          0.9         0.9        78.2
                                          6.         2          1.8         1.8        80.0
                                          7.         1          0.9         0.9        80.9
                                          8.         3          2.7         2.7        83.6
                                         10.         3          2.7         2.7        86.4
                                         11.         2          1.8         1.8        88.2
                                         12.         2          1.8         1.8        90.0
                                         13.         2          1.8         1.8        91.8
                                         14.         1          0.9         0.9        92.7
                                         15.         2          1.8         1.8        94.5
                                         19.         1          0.9         0.9        95.5
                                         20.         2          1.8         1.8        97.3
                                         22.         1          0.9         0.9        98.2
                                         28.         1          0.9         0.9        99.1
                                         35.         1          0.9         0.9       100.0
                                                 -------     -------     -------     -------
                                         TOTAL      110       100.0       100.0       100.0
```

```
FLETRACEN NORVA - COURSE STATISTICS
FILE   LASBCHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   PCTFAIL    PCT OF STUDENTS FAILING

     CODE
            I
       0.   ********************************************************************* I    67)  60.9 PCT
            I
            I
            I
       1.   *** I      2)   1.8 PCT
            I
            I
       2.   ******* I      6)   5.5 PCT
            I
            I
       3.   ***** I      4)   3.6 PCT
            I
            I
       4.   ******* I      6)   5.5 PCT
            I
            I
       5.   ** I      1)   0.9 PCT
            I
            I
       6.   *** I      2)   1.8 PCT
            I
            I
       7.   ** I      1)   0.9 PCT
            I
            I
       8.   **** I      3)   2.7 PCT
            I
            I
      10.   **** I      3)   2.7 PCT
            I
            I
      11.   *** I      2)   1.8 PCT
            I
            I
      12.   *** I      2)   1.8 PCT
            I
            I
      13.   *** I      2)   1.8 PCT
            I
            I
      14.   ** I      1)   0.9 PCT
            I
            I
      15.   *** I      2)   1.8 PCT
            I
            I
      19.   ** I      1)   0.9 PCT
            I
            I
      20.   *** I      2)   1.8 PCT
            I
            I
      22.   ** I      1)   0.9 PCT
            I
            I
      28.   ** I      1)   0.9 PCT
            I
            I
      35.   ** I      1)   0.9 PCT
            I
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0        10        20        30        40        50        60        70        80        90       100
            FREQUENCY

STATISTICS..

MEAN             3.527          STD ERROR        0.619          MEDIAN           0.0
MODE             0.0            STD DEV          6.493          VARIANCE        42.160
KURTOSIS         6.154          SKEWNESS         2.386          RANGE           35.000
MINIMUM          0.0            MAXIMUM         35.000

VALID   OBSERVATIONS -        110
MISSING OBSERVATIONS -          0
```

```
[illegible] NORVA - COURSE STATISTICS
FILE   LRSTCHAR (CREATION DATE = 09/02/76)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   PCTALSOR   PCT OF ACADEMIC SETBACKS

VALUE LABEL                                   VALUE   ABSOLUTE    RELATIVE    ADJUSTED    CUMULATIVE
                                                      FREQUENCY   FREQUENCY   FREQUENCY    ADJ FREQ
                                                                  (PERCENT)   (PERCENT)   (PERCENT)
                                              - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                                 0.      104        94.5        94.5        94.5
                                                 4.        1         0.9         0.9        95.5
                                                 5.        1         0.9         0.9        96.4
                                                 8.        1         0.9         0.9        97.3
                                                 9.        1         0.9         0.9        98.2
                                                11.        1         0.9         0.9        99.1
                                                15.        1         0.9         0.9       100.0
                                                      -------     -------     -------     -------
                                              TOTAL      110       100.0       100.0       100.0
```

```
VARIABLE   PCTALSOR   PCT OF ACADEMIC SETBACKS
      CODE
            I
       0.   ****************************************************** (  104)  94.5 PCT
            I
            I
            I
       4.   ** (    1)  0.9 PCT
            I
            I
            I
       5.   ** (    1)  0.9 PCT
            I
            I
            I
       8.   ** (    1)  0.9 PCT
            I
            I
            I
       9.   ** (    1)  0.9 PCT
            I
            I
            I
      11.   ** (    1)  0.9 PCT
            I
            I
            I
      15.   ** (    1)  0.9 PCT
            I
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0        20        40        60        80       100       120       140       160       180       200
            FREQUENCY
STATISTICS..

MEAN           0.485          STD ERROR      0.449               MEDIAN        0.0
MODE           0.0            STD DEV        4.712               VARIANCE     22.199
KURTOSIS      42.761          SKEWNESS       6.518               RANGE        15.000
MINIMUM        0.0            MAXIMUM       15.000

VALID   OBSERVATIONS -        110
MISSING OBSERVATIONS -          0
```

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FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE - PCTNASBK   PCT OF NON-ACAD SETBACKS

VALUE LABEL                                  VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                     FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                 (PERCENT)   (PERCENT)   (PERCENT)
                                            - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                0.       107        97.3        97.3        97.3

                                                2.         2         1.8         1.8        99.1

                                                7.         1         0.9         0.9       100.0
                                                     -------     -------     -------     -------
                                             TOTAL       110       100.0       100.0       100.0




VARIABLE   PCTNASBK   PCT OF NON-ACAD SETBACKS

     CODE
           I
       0.  ****************************************************** I   107)  97.3 PCT
           I
           I
           I
       2.  ** I     2)   1.8 PCT
           I
           I
           I
       7.  ** I     1)   0.9 PCT
           I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        20        40        60        80       100       120       140       160       180       200
           FREQUENCY

STATISTICS..

MEAN              0.100          STD ERROR        0.068               MEDIAN            0.0

MODE              0.0            STD DEV          0.716               VARIANCE          0.513

KURTOSIS         77.711          SKEWNESS         8.585               RANGE             7.000

MINIMUM           0.0            MAXIMUM          7.000

VALID   OBSERVATIONS -          110
MISSING OBSERVATIONS -            0
```

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FLETRACEN NORVA - COURSE STATISTICS

FILE    CRSEEMAN (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE    PCTNADIS   PCT OF NON-ACAD DISENROLLMENTS

VALUE LABEL
                                     VALUE    ABSOLUTE     RELATIVE    ADJUSTED   CUMULATIVE
                                             FREQUENCY    FREQUENCY   FREQUENCY    ADJ FREQ
                                                          (PERCENT)   (PERCENT)    (PERCENT)
                                     - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                       0.        60          54.5        54.5         54.5

                                       1.        12          10.9        10.9         65.5

                                       2.        14          12.7        12.7         78.2

                                       3.         8           7.3         7.3         85.5

                                       4.         2           1.8         1.8         87.3

                                       5.         2           1.8         1.8         89.1

                                       6.         4           3.6         3.6         92.7

                                       7.         2           1.8         1.8         94.5

                                       8.         2           1.8         1.8         96.4

                                       9.         1           0.9         0.9         97.3

                                      15.         2           1.8         1.8         99.1

                                      17.         1           0.9         0.9        100.0
                                              -------      -------     -------      -------
                                     TOTAL      110         100.0       100.0        100.0
```

```
PLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT PTC NORVA

VARIABLE   PCTNADIS   PCT OF NON-ACAD DISENROLLMENTS

     CODE
           I
       0.  I************************************************************ (   60)  54.5 PCT
           I
           I
       1.  I************ (   12)  10.9 PCT
           I
           I
       2.  I************** (   14)  12.7 PCT
           I
           I
       3.  I******** (    8)   7.3 PCT
           I
           I
       4.  I** (    2)   1.8 PCT
           I
           I
       5.  I** (    2)   1.8 PCT
           I
           I
       6.  I**** (    4)   3.6 PCT
           I
           I
       7.  I** (    2)   1.8 PCT
           I
           I
       8.  I** (    2)   1.8 PCT
           I
           I
       9.  I* (    1)   0.9 PCT
           I
           I
      15.  I** (    2)   1.8 PCT
           I
           I
      17.  I* (    1)   0.9 PCT
           I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        10        20        30        40        50        60        70        80        90       100
           FREQUENCY

STATISTICS..

MEAN          1.745          STD ERROR     0.300          MEDIAN        0.0
MODE          0.0            STD DEV       3.143          VARIANCE      9.880
KURTOSIS      8.895          SKEWNESS      2.400          RANGE        17.000
MINIMUM       0.0            MAXIMUM      17.000

VALID   OBSERVATIONS -       110
MISSING OBSERVATIONS -         0
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FLETRACEN NORVA - COURSE STATISTICS

FILE   CASECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   GCT

VALUE LABEL                                    VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                       FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                   (PERCENT)   (PERCENT)   (PERCENT)
                                               - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                46.        2          1.8         4.8         4.8

                                                47.        1          0.9         2.4         7.1

                                                49.        2          1.8         4.8        11.9

                                                50.        2          1.8         4.8        16.7

                                                51.        2          1.8         4.8        21.4

                                                52.        1          0.9         2.4        23.8

                                                53.        2          1.8         4.8        28.6

                                                54.        1          0.9         2.4        31.0

                                                55.        2          1.8         4.8        35.7

                                                56.        4          3.6         9.5        45.2

                                                57.        5          4.5        11.9        57.1

                                                58.        5          4.5        11.9        69.0

                                                59.        1          0.9         2.4        71.4

                                                60.        1          0.9         2.4        73.8

                                                61.        4          3.6         9.5        83.3

                                                62.        1          0.9         2.4        85.7

                                                63.        3          2.7         7.1        92.9

                                                64.        3          2.7         7.1       100.0

                                                 0.       68         61.8     MISSING       100.0
                                                        -------     -------     -------     -------
                                               TOTAL      110        100.0       100.0       100.0
```

```
FLETRACEN NORVA   COURSE STATISTICS

FILE   CRSPLMAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   GCT

     CODE
           I
      46.  *** I      2)   1.8 PCT
           I
           I
           I
      47.  ** I      1)   0.9 PCT
           I
           I
           I
      49.  *** I      2)   1.8 PCT
           I
           I
           I
      50.  *** I      2)   1.8 PCT
           I
           I
           I
      51.  *** I      2)   1.8 PCT
           I
           I
           I
      52.  ** I      1)   0.9 PCT
           I
           I
           I
      53.  *** I      2)   1.8 PCT
           I
           I
           I
      54.  ** I      1)   0.9 PCT
           I
           I
           I
      55.  *** I      2)   1.8 PCT
           I
           I
           I
      56.  ***** I      4)   3.6 PCT
           I
           I
           I
      57.  ****** I      5)   4.5 PCT
           I
           I
           I
      58.  ****** I      5)   4.5 PCT
           I
           I
           I
      59.  ** I      1)   0.9 PCT
           I
           I
           I
      60.  ** I      1)   0.9 PCT
           I
           I
           I
      61.  ***** I      4)   3.6 PCT
           I
           I
           I
      62.  ** I      1)   0.9 PCT
           I
           I
           I
      63.  **** I      3)   2.7 PCT
           I
           I
           I
      64.  **** I      3)   2.7 PCT
           I
           I
           I
       0.  ********************************************************************* I     68)  61.8 PCT
  (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        10        20        30        40        50        60        70        80        90       100
           FREQUENCY

STATISTICS..

MEAN          56.333          STD ERROR       0.785          MEDIAN        56.900

MODE          57.000          STD DEV         5.088          VARIANCE      25.887

KURTOSIS      -0.732          SKEWNESS       -0.392          RANGE         18.000

MINIMUM       46.000          MAXIMUM        64.000

VALID   OBSERVATIONS -        42
MISSING OBSERVATIONS -        68
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PLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   ANI

VALUE LABEL                                   VALUE    ABSOLUTE     RELATIVE     ADJUSTED    CUMULATIVE
                                                       FREQUENCY    FREQUENCY    FREQUENCY    ADJ FREQ
                                                                    (PERCENT)    (PERCENT)    (PERCENT)
                                              - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                               44.         1          0.9          2.4          2.4

                                               46.         1          0.9          2.4          4.8

                                               48.         2          1.8          4.8          9.5

                                               49.         2          1.8          4.8         14.3

                                               50.         2          1.8          4.8         19.0

                                               51.         3          2.7          7.1         26.2

                                               52.         3          2.7          7.1         33.3

                                               53.         3          2.7          7.1         40.5

                                               54.         4          3.6          9.5         50.0

                                               55.         2          1.8          4.8         54.8

                                               56.         5          4.5         11.9         66.7

                                               57.         1          0.9          2.4         69.0

                                               58.         1          0.9          2.4         71.4

                                               60.         2          1.8          4.8         76.2

                                               61.         2          1.8          4.8         81.0

                                               62.         2          1.8          4.8         85.7

                                               63.         2          1.8          4.8         90.5

                                               64.         3          2.7          7.1         97.6

                                               65.         1          0.9          2.4        100.0

                                                0.        68         61.8        MISSING      100.0
                                                       -------      -------      -------      -------
                                              TOTAL      110        100.0        100.0        100.0
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FLETRACEN NORVA - COURSE STATISTICS
FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   ARI

     CODE
            I
      44.   ** I      1)   0.9 PCT
            I
            I
            I
      46.   ** I      1)   0.9 PCT
            I
            I
            I
      48.   *** I      2)   1.8 PCT
            I
            I
            I
      49.   *** I      2)   1.8 PCT
            I
            I
            I
      50.   *** I      2)   1.8 PCT
            I
            I
            I
      51.   **** I      3)   2.7 PCT
            I
            I
            I
      52.   **** I      3)   2.7 PCT
            I
            I
            I
      53.   **** I      3)   2.7 PCT
            I
            I
            I
      54.   ***** I      4)   3.6 PCT
            I
            I
            I
      55.   *** I      2)   1.8 PCT
            I
            I
            I
      56.   ****** I      5)   4.5 PCT
            I
            I
            I
      57.   ** I      1)   0.9 PCT
            I
            I
            I
      58.   ** I      1)   0.9 PCT
            I
            I
            I
      60.   *** I      2)   1.8 PCT
            I
            I
            I
      61.   *** I      2)   1.8 PCT
            I
            I
            I
      62.   *** I      2)   1.8 PCT
            I
            I
            I
      63.   *** I      2)   1.8 PCT
            I
            I
            I
      64.   **** I      3)   2.7 PCT
            I
            I
            I
      65.   ** I      1)   0.9 PCT
            I
            I
            I
      0.    ********************************************************************* I    68)  61.8 PCT
  (MISSING) I
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0        10        20        30        40        50        60        70        80        90       100
            FREQUENCY

STATISTICS..

MEAN           55.286           STD ERROR      0.841           MEDIAN        54.500
MODE           56.000           STD DEV        5.452           VARIANCE      29.725
KURTOSIS       -0.868           SKEWNESS       0.129           RANGE         21.000
MINIMUM        44.000           MAXIMUM       65.000

VALID   OBSERVATIONS -       42
MISSING OBSERVATIONS -       68
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FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   MECH

VALUE LABEL                          VALUE   ABSOLUTE    RELATIVE   ADJUSTED   CUMULATIVE
                                             FREQUENCY  FREQUENCY  FREQUENCY    ADJ FREQ
                                                        (PERCENT)  (PERCENT)   (PERCENT)
                                     - - - - - - - - - - - - - - - - - - - - - - - - - -

                                      43.        2         1.8        4.8          4.8

                                      44.        1         0.9        2.4          7.1

                                      45.        1         0.9        2.4          9.5

                                      46.        6         5.5       14.3         23.8

                                      47.        3         2.7        7.1         31.0

                                      48.        1         0.9        2.4         33.3

                                      50.        3         2.7        7.1         40.5

                                      51.        4         3.6        9.5         50.0

                                      52.        2         1.8        4.8         54.8

                                      53.        4         3.6        9.5         64.3

                                      54.        6         5.5       14.3         78.6

                                      55.        5         4.5       11.9         90.5

                                      56.        4         3.6        9.5        100.0

                                       0.       68        61.8    MISSING        100.0
                                              -------    -------    -------      -------
                                     TOTAL     110       100.0      100.0        100.0
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FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   MECH

      CODE
           I
       83. *** I     2)   1.8 PCT
           I
           I
           I
       84. ** I     1)   0.9 PCT
           I
           I
           I
       85. ** I     1)   0.9 PCT
           I
           I
           I
       86. ******* I     6)   5.5 PCT
           I
           I
           I
       87. **** I     3)   2.7 PCT
           I
           I
           I
       88. ** I     1)   0.9 PCT
           I
           I
           I
       90. **** I     3)   2.7 PCT
           I
           I
           I
       91. ***** I     4)   3.6 PCT
           I
           I
           I
       92. *** I     2)   1.8 PCT
           I
           I
           I
       93. ***** I     4)   3.6 PCT
           I
           I
           I
       94. ******* I     6)   5.5 PCT
           I
           I
           I
       95. ****** I     5)   4.5 PCT
           I
           I
           I
       96. ***** I     4)   3.6 PCT
           I
           I
           I
        0. ********************************************************************* I    68)  61.8 PCT
 (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        10        20        30        40        50        60        70        80        90       100
           FREQUENCY

STATISTICS...

MEAN          90.786          STD ERROR       0.625          MEDIAN       91.900

MODE          94.000          STD DEV         4.052          VARIANCE     16.418

KURTOSIS      -1.150          SKEWNESS       -0.411          RANGE        13.000

MINIMUM       83.000          MAXIMUM        96.000

VALID   OBSERVATIONS -       42
MISSING OBSERVATIONS -       68
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FLETRACEN NORVA - COURSE STATISTICS

FILE   CASECHAN (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   CLER

VALUE LABEL                                  VALUE    ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                     FREQUENCY   FREQUENCY   FREQUENCY    ADJ FREQ
                                                                 (PERCENT)   (PERCENT)   (PERCENT)
                                           - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                                              47.          1         0.9         2.4         2.4
                                              48.          2         1.8         4.8         7.1
                                              49.          3         2.7         7.1        14.3
                                              50.          4         3.6         9.5        23.8
                                              51.          9         8.2        21.4        45.2
                                              52.          7         6.4        16.7        61.9
                                              53.          3         2.7         7.1        69.0
                                              54.          5         4.5        11.9        81.0
                                              55.          3         2.7         7.1        88.1
                                              56.          2         1.8         4.8        92.9
                                              57.          2         1.8         4.8        97.6
                                              59.          1         0.9         2.4       100.0
                                               0.         68        61.8     MISSING       100.0
                                                     -------     -------     -------     -------
                                           TOTAL         110       100.0       100.0       100.0
```

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FLITRALEN NORVA - COURSE STATISTICS
FILE   CRSECHAR (CREATION DATE = 08/02/76)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   CLER
     CODE
            I
      47.   ** I      1)   0.9 PCT
            I
            I
            I
      48.   *** I      2)   1.8 PCT
            I
            I
            I
      49.   **** I      3)   2.7 PCT
            I
            I
            I
      50.   ***** I      4)   3.6 PCT
            I
            I
            I
      51.   ********** I      9)   8.2 PCT
            I
            I
            I
      52.   ******** I      7)   6.4 PCT
            I
            I
            I
      53.   **** I      3)   2.7 PCT
            I
            I
            I
      54.   ****** I      5)   4.5 PCT
            I
            I
            I
      55.   **** I      3)   2.7 PCT
            I
            I
            I
      56.   *** I      2)   1.8 PCT
            I
            I
            I
      57.   *** I      2)   1.8 PCT
            I
            I
            I
      58.   ** I      1)   0.9 PCT
            I
            I
            I
       0.   ********************************************************************* I    68)  61.8 PCT
  (MISSING) I
            I
            I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
            0        10        20        30        40        50        60        70        80        90       100
            FREQUENCY

STATISTICS..

MEAN           52.190          STD ERROR      0.409          MEDIAN        51.786
MODE           51.000          STD DEV        2.653          VARIANCE       7.037
KURTOSIS       -0.284          SKEWNESS       0.403          RANGE         12.000
MINIMUM        47.000          MAXIMUM       59.000

VALID   OBSERVATIONS -         42
MISSING OBSERVATIONS -         68
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FLETRACEN NORVA - COURSE STATISTICS

FILE   LPSICHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   [illegible]

VALUE LABEL                          VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                            FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                        (PERCENT)   (PERCENT)   (PERCENT)
                                     - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                      44.       1          0.9         2.4         2.4
                                      46.       2          1.8         4.8         7.1
                                      47.       5          4.5        11.9        19.0
                                      48.       2          1.8         4.8        23.8
                                      50.       1          0.9         2.4        26.2
                                      51.       5          4.5        11.9        38.1
                                      52.       2          1.8         4.8        42.9
                                      53.       3          2.7         7.1        50.0
                                      54.       5          4.5        11.9        61.9
                                      55.       4          3.6         9.5        71.4
                                      56.       6          5.5        14.3        85.7
                                      57.       3          2.7         7.1        92.9
                                      58.       2          1.8         4.8        97.6
                                      59.       1          0.9         2.4       100.0
                                       0.      68         61.8      MISSING      100.0
                                            -------     -------     -------     -------
                                    TOTAL     110        100.0       100.0       100.0
```

```
[illegible] NORVA - COURSE STATISTICS
FILE   (NONAME) (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   SHIP

     CODE
          I
     44.  ** I      1)   0.9 PCT
          I
          I
          I
     46.  *** I      2)   1.8 PCT
          I
          I
          I
     47.  ****** I      5)   4.5 PCT
          I
          I
          I
     48.  *** I      2)   1.8 PCT
          I
          I
          I
     50.  ** I      1)   0.9 PCT
          I
          I
          I
     51.  ****** I      5)   4.5 PCT
          I
          I
          I
     52.  *** I      2)   1.8 PCT
          I
          I
          I
     53.  **** I      3)   2.7 PCT
          I
          I
          I
     54.  ****** I      5)   4.5 PCT
          I
          I
          I
     55.  ***** I      4)   3.6 PCT
          I
          I
          I
     56.  ******* I      6)   5.5 PCT
          I
          I
          I
     57.  **** I      3)   2.7 PCT
          I
          I
          I
     58.  *** I      2)   1.8 PCT
          I
          I
          I
     59.  ** I      1)   0.9 PCT
          I
          I
          I
      0.  ********************************************************************** I    68)  61.8 PCT
(MISSING) I
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        10        20        30        40        50        60        70        80        90       100
          FREQUENCY

STATISTICS...

MEAN          52.548          STD ERROR     0.610          MEDIAN        53.500
MODE          56.000          STD DEV       3.962          VARIANCE      15.422
KURTOSIS      -0.966          SKEWNESS     -0.441          RANGE         15.000
MINIMUM       44.000          MAXIMUM      59.000

VALID   OBSERVATIONS -        42
MISSING OBSERVATIONS -        68
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FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   AFQT

VALUE LABEL                                VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                   FREQUENCY   FREQUENCY   FREQUENCY    ADJ FREQ
                                                               (PERCENT)   (PERCENT)   (PERCENT)
                                          - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                            40.        2          1.8         4.9          4.9
                                            46.        3          2.7         7.3         12.2
                                            47.        1          0.9         2.4         14.6
                                            51.        1          0.9         2.4         17.1
                                            54.        1          0.9         2.4         19.5
                                            57.        2          1.8         4.9         24.4
                                            58.        1          0.9         2.4         26.8
                                            59.        1          0.9         2.4         29.3
                                            61.        1          0.9         2.4         31.7
                                            62.        1          0.9         2.4         34.1
                                            64.        2          1.8         4.9         39.0
                                            65.        1          0.9         2.4         41.5
                                            66.        1          0.9         2.4         43.9
                                            68.        1          0.9         2.4         46.3
                                            69.        2          1.8         4.9         51.2
                                            70.        1          0.9         2.4         53.7
                                            71.        1          0.9         2.4         56.1
                                            72.        1          0.9         2.4         58.5
                                            73.        3          2.7         7.3         65.9
                                            74.        2          1.8         4.9         70.7
                                            75.        2          1.8         4.9         75.6
                                            76.        2          1.8         4.9         80.5
                                            77.        2          1.8         4.9         85.4
                                            78.        2          1.8         4.9         90.2
                                            79.        1          0.9         2.4         92.7
                                            80.        2          1.8         4.9         97.6
                                            84.        1          0.9         2.4        100.0
                                             0.       69         62.7     MISSING        100.0
                                                   -------     -------     -------     -------
                                          TOTAL      110        100.0       100.0       100.0
```

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FLETRACEN NORVA - COURSE STATISTICS
FILE    CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA
VARIABLE   AFQT
      CODE
           I
     40.   *** (     2)   1.8 PCT
           I
           I
           I
     46.   **** (     3)   2.7 PCT
           I
           I
           I
     47.   ** (     1)   0.9 PCT
           I
           I
           I
     51.   ** (     1)   0.9 PCT
           I
           I
           I
     54.   ** (     1)   0.9 PCT
           I
           I
           I
     57.   *** (     2)   1.8 PCT
           I
           I
           I
     58.   ** (     1)   0.9 PCT
           I
           I
           I
     59.   ** (     1)   0.9 PCT
           I
           I
           I
     61.   ** (     1)   0.9 PCT
           I
           I
           I
     62.   ** (     1)   0.9 PCT
           I
           I
           I
     64.   *** (     2)   1.8 PCT
           I
           I
           I
     65.   ** (     1)   0.9 PCT
           I
           I
           I
     66.   ** (     1)   0.9 PCT
           I
           I
           I
     68.   ** (     1)   0.9 PCT
           I
           I
           I
     69.   *** (     2)   1.8 PCT
           I
           I
           I
     70.   ** (     1)   0.9 PCT
           I
           I
           I
     71.   ** (     1)   0.9 PCT
           I
           I
           I
     72.   ** (     1)   0.9 PCT
           I
           I
           I
     73.   **** (     3)   2.7 PCT
           I
           I
           I
     74.   *** (     2)   1.8 PCT
           I
           I
           I
     75.   *** (     2)   1.8 PCT
           I
           I
           I
     76.   *** (     2)   1.8 PCT
           I
           I
           I
     77.   *** (     2)   1.8 PCT
           I
           I
           I
     78.   *** (     2)   1.8 PCT
           I
           I
           I
     79.   ** (     1)   0.9 PCT
           I
```

```
FLETRACEN NORVA - COURSE STATISTICS
           I
      80.  *** (     2)   1.8 PCT
           I
           I
           I
      84.  ** (      1)   0.9 PCT
           I
           I
           I
       0.  ********************************************************************* (    69)  62.7 PCT
 (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        10        20        30        40        50        60        70        80        90       100
           FREQUENCY

STATISTICS..

MEAN            65.951          STD ERROR       1.874          MEDIAN        69.250

MODE            73.000          STD DEV        11.998          VARIANCE     143.948

KURTOSIS        -0.601          SKEWNESS       -0.691          RANGE         44.000

MINIMUM         40.000          MAXIMUM        84.000

VALID   OBSERVATIONS -        41
MISSING OBSERVATIONS -        69
```

```
FLETRALEN NORVA - COURSE STATISTICS

FILE    CRSECHAP (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE    ETST

VALUE LABEL                     VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                        FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                    (PERCENT)   (PERCENT)   (PERCENT)
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                 46.        1          0.9         2.4         2.4
                                 48.        1          0.9         2.4         4.8
                                 49.        1          0.9         2.4         7.1
                                 51.        1          0.9         2.4         9.5
                                 52.        3          2.7         7.1        16.7
                                 53.        2          1.8         4.8        21.4
                                 54.        1          0.9         2.4        23.8
                                 55.        6          5.5        14.3        38.1
                                 56.        4          3.6         9.5        47.6
                                 57.        3          2.7         7.1        54.8
                                 59.        1          0.9         2.4        57.1
                                 60.        5          4.5        11.9        69.0
                                 62.        1          0.9         2.4        71.4
                                 63.        1          0.9         2.4        73.8
                                 64.        1          0.9         2.4        76.2
                                 65.        1          0.9         2.4        78.6
                                 66.        3          2.7         7.1        85.7
                                 67.        5          4.5        11.9        97.6
                                 68.        1          0.9         2.4       100.0
                                  0.       68         61.8      MISSING      100.0
                                        -------     -------     -------     -------
                               TOTAL      110        100.0       100.0       100.0
```

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```
FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   FTST

      CODE
           I
      46.  ** I        1)   0.9 PCT
           I
           I
           I
      48.  ** I        1)   0.9 PCT
           I
           I
           I
      49.  ** I        1)   0.9 PCT
           I
           I
           I
      51.  ** I        1)   0.9 PCT
           I
           I
           I
      52.  **** I        3)   2.7 PCT
           I
           I
           I
      53.  *** I        2)   1.8 PCT
           I
           I
           I
      54.  ** I        1)   0.9 PCT
           I
           I
           I
      55.  ******* I        6)   5.5 PCT
           I
           I
           I
      56.  ***** I        4)   3.6 PCT
           I
           I
           I
      57.  **** I        3)   2.7 PCT
           I
           I
           I
      59.  ** I        1)   0.9 PCT
           I
           I
           I
      60.  ****** I        5)   4.5 PCT
           I
           I
           I
      62.  ** I        1)   0.9 PCT
           I
           I
           I
      63.  ** I        1)   0.9 PCT
           I
           I
           I
      64.  ** I        1)   0.9 PCT
           I
           I
           I
      65.  ** I        1)   0.9 PCT
           I
           I
           I
      66.  **** I        3)   2.7 PCT
           I
           I
           I
      67.  ****** I        5)   4.5 PCT
           I
           I
           I
      68.  ** I        1)   0.9 PCT
           I
           I
           I
       0.  ********************************************************************* I       68)  61.8 PCT
 (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0        10        20        30        40        50        60        70        80        90       100
           FREQUENCY

STATISTICS..

MEAN           58.310          STD ERROR      0.921          MEDIAN        57.000

MODE           55.000          STD DEV        5.970          VARIANCE      35.636

KURTOSIS       -0.960          SKEWNESS       0.074          RANGE         22.000

MINIMUM        46.000          MAXIMUM       68.000

VALID   OBSERVATIONS -         42
MISSING OBSERVATIONS -         68
```

```
FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   STUDAGE    AVE AGE OF STUDENTS

VALUE LABEL                                 VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                    FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                (PERCENT)   (PERCENT)   (PERCENT)
                                            - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                             20.        2         1.8         4.8         4.8

                                             21.        2         1.8         4.8         9.5

                                             22.        9         8.2        21.4        31.0

                                             23.        7         6.4        16.7        47.6

                                             24.        7         6.4        16.7        64.3

                                             25.        3         2.7         7.1        71.4

                                             26.        3         2.7         7.1        78.6

                                             27.        2         1.8         4.8        83.3

                                             29.        4         3.6         9.5        92.9

                                             30.        1         0.9         2.4        95.2

                                             31.        1         0.9         2.4        97.6

                                             32.        1         0.9         2.4       100.0

                                              0.       68        61.8      MISSING      100.0
                                                    -------     -------     -------     -------
                                            TOTAL     110        100.0       100.0       100.0

VARIABLE   STUDAGE    AVE AGE OF STUDENTS

   CODE
         I
    20.  *** I      2)   1.8 PCT
         I
         I
    21.  *** I      2)   1.8 PCT
         I
         I
    22.  ********** I      9)   8.2 PCT
         I
         I
    23.  ******** I      7)   6.4 PCT
         I
         I
    24.  ******** I      7)   6.4 PCT
         I
         I
    25.  **** I      3)   2.7 PCT
         I
         I
    26.  **** I      3)   2.7 PCT
         I
         I
    27.  *** I      2)   1.8 PCT
         I
         I
    29.  ***** I      4)   3.6 PCT
         I
         I
    30.  ** I      1)   0.9 PCT
         I
         I
    31.  ** I      1)   0.9 PCT
         I
         I
    32.  ** I      1)   0.9 PCT
         I
         I
     0.  ********************************************************************* I     68)  61.8 PCT
(MISSING) I
         I
         I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
         0        10        20        30        40        50        60        70        80        90       100
         FREQUENCY

STATISTICS..

MEAN             24.405            STD ERROR        0.462            MEDIAN          23.643

MODE             22.000            STD DEV          2.996            VARIANCE         8.979

KURTOSIS         -0.069            SKEWNESS         0.864            RANGE           12.000

MINIMUM          20.000            MAXIMUM         32.000

VALID   OBSERVATIONS -        42
MISSING OBSERVATIONS -        68
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FLETRACEN NORVA - COURSE STATISTICS                                              09/04/74        PAGE  115

FILE   CRSFCHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   STUDRATE   AVE RATE OF STUDENTS

VALUE LABEL                                       VALUE   ABSOLUTE     RELATIVE     ADJUSTED   CUMULATIVE
                                                          FREQUENCY    FREQUENCY    FREQUENCY   ADJ FREQ
                                                                       (PERCENT)    (PERCENT)   (PERCENT)
                                                 - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                                     2.         1          0.9          0.9         0.9

                                                     3.        18         16.4         16.5        17.4

                                                     4.        43         39.1         39.4        56.9

                                                     5.        29         26.4         26.6        83.5

                                                     6.        14         12.7         12.8        96.3

                                                     7.         4          3.6          3.7       100.0

                                                     0.         1          0.9      MISSING       100.0
                                                          -------      -------      -------     -------
                                                 TOTAL        110        100.0        100.0       100.0




VARIABLE   STUDRATE   AVE RATE OF STUDENTS

     CODE
           I
       2.  *** (     1)   0.9 PCT
           I
           I
       3.  ************************************* (    18)  16.4 PCT
           I
           I
       4.  ***************************************************************************************** (    43)  39.1 PCT
           I
           I
       5.  *********************************************************** (    29)  26.4 PCT
           I
           I
       6.  ***************************** (    14)  12.7 PCT
           I
           I
       7.  ********* (     4)   3.6 PCT
           I
           I
       0.  *** (     1)   0.9 PCT
  (MISSING) I
           I
           I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
           0         5        10        15        20        25        30        35        40        45        50
           FREQUENCY

STATISTICS..

MEAN            4.450            STD ERROR      0.101            MEDIAN          4.326

MODE            4.000            STD DEV        1.058            VARIANCE        1.120

KURTOSIS       -0.243            SKEWNESS       0.302            RANGE           5.000

MINIMUM         2.000            MAXIMUM        7.000

VALID   OBSERVATIONS -       109
MISSING OBSERVATIONS -         1
```

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FLETRACEN NORVA - COURSE STATISTICS                                          09/04/74      PAGE  117

FILE   LRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   INSTHOT    AVE INSTR ROTATION FREQ IN MONTHS

VALUE LABEL                                  VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                     FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                                 (PERCENT)   (PERCENT)   (PERCENT)
                                             - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                              12.        3         2.7         2.8         2.8

                                              15.        2         1.8         1.9         4.7

                                              18.       12        10.9        11.2        15.9

                                              20.        2         1.8         1.9        17.8

                                              24.       25        22.7        23.4        41.1

                                              26.        1         0.9         0.9        42.1

                                              30.       48        43.6        44.9        86.9

                                              31.        1         0.9         0.9        87.9

                                              32.        4         3.6         3.7        91.6

                                              33.        4         3.6         3.7        95.3

                                              34.        1         0.9         0.9        96.3

                                              35.        1         0.9         0.9        97.2

                                              44.        2         1.8         1.9        99.1

                                              99.        1         0.9         0.9       100.0

                                               0.        3         2.7     MISSING       100.0
                                                     -------     -------     -------     -------
                                             TOTAL     110       100.0       100.0       100.0
```

```
FLETRACEN NORVA - COURSE STATISTICS

FILE   CNSECMAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   INSTROT    AVE INSTR ROTATION FREQ IN MONTHS

      CODE
             I
      12.    ******* I      3)   2.7 PCT
             I
             I
             I
      15.    ***** I      2)   1.8 PCT
             I
             I
             I
      18.    ************************* I     12)  10.9 PCT
             I
             I
             I
      20.    ***** I      2)   1.8 PCT
             I
             I
             I
      24.    *************************************************** I     25)  22.7 PCT
             I
             I
             I
      26.    *** I      1)   0.9 PCT
             I
             I
             I
      30.    ************************************************************************************************* I     48)  43.6 PCT
             I
             I
             I
      31.    *** I      1)   0.9 PCT
             I
             I
             I
      32.    ********* I      4)   3.6 PCT
             I
             I
             I
      33.    ********* I      4)   3.6 PCT
             I
             I
             I
      36.    *** I      1)   0.9 PCT
             I
             I
             I
      45.    *** I      1)   0.9 PCT
             I
             I
             I
      48.    ***** I      2)   1.8 PCT
             I
             I
             I
      99.    *** I      1)   0.9 PCT
             I
             I
             I
       0.    ******* I      3)   2.7 PCT
  (MISSING)  I
             I
             I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
             0         5        10        15        20        25        30        35        40        45        50
             FREQUENCY

STATISTICS..

MEAN           27.617          STD ERROR      0.881          MEDIAN        28.443
MODE           30.000          STD DEV        9.115          VARIANCE      83.078
KURTOSIS       11.872          SKEWNESS       4.401          RANGE         87.000
MINIMUM        12.000          MAXIMUM       99.000

VALID   OBSERVATIONS -        107
MISSING OBSERVATIONS -          3
```

```
FLTRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   INSTASGN   AVE NO. INSTRUCTORS PER CLASS

VALUE LABEL                         VALUE   ABSOLUTE   RELATIVE   ADJUSTED   CUMULATIVE
                                            FREQUENCY  FREQUENCY  FREQUENCY   ADJ FREQ
                                                       (PERCENT)  (PERCENT)  (PERCENT)
                                  - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                       1.        34       30.9       32.1       32.1
                                       2.        50       45.5       47.2       79.2
                                       3.        13       11.8       12.3       91.5
                                       4.         5        4.5        4.7       96.2
                                       5.         1        0.9        0.9       97.2
                                       8.         1        0.9        0.9       98.1
                                       9.         1        0.9        0.9       99.1
                                      18.         1        0.9        0.9      100.0
                                       0.         4        3.6    MISSING      100.0
                                             -------    -------    -------    -------
                                   TOTAL        110      100.0      100.0      100.0


VARIABLE   INSTASGN   AVE NO. INSTRUCTORS PER CLASS

   CODE
          I
     1.   ******************************************************************** I   34)  30.9 PCT
          I
          I
     2.   **************************************************************************************************** I   50)  45.5 PCT
          I
          I
     3.   ************************** I   13)  11.8 PCT
          I
          I
     4.   ********** I   5)  4.5 PCT
          I
          I
     5.   *** I   1)  0.9 PCT
          I
          I
     8.   *** I   1)  0.9 PCT
          I
          I
     9.   *** I   1)  0.9 PCT
          I
          I
    18.   *** I   1)  0.9 PCT
          I
          I
     0.   ********* I   4)  3.6 PCT
 (MISSING) I
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0         5        10        15        20        25        30        35        40        45        50
          FREQUENCY


STATISTICS..

MEAN           2.198          STD ERROR      0.193          MEDIAN         1.880

MODE           2.000          STD DEV        1.983          VARIANCE       3.932

KURTOSIS      37.931          SKEWNESS       5.460          RANGE         17.000

MINIMUM        1.000          MAXIMUM       18.000

VALID   OBSERVATIONS -         106
MISSING OBSERVATIONS -           4
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FLTTRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLE   INSTRATE   AVE PAYGRADE OF INSTRUCTORS

VALUE LABEL                                VALUE   ABSOLUTE    RELATIVE    ADJUSTED   CUMULATIVE
                                                   FREQUENCY   FREQUENCY   FREQUENCY   ADJ FREQ
                                                               (PERCENT)   (PERCENT)   (PERCENT)
                                          - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                                             5.        1          0.9         0.9         0.9

                                             6.       42         38.2        39.3        40.2

                                             7.       62         56.4        57.9        98.1

                                             8.        2          1.8         1.9       100.0

                                             0.        3          2.7      MISSING      100.0
                                                    -------     -------     -------     -------
                                          TOTAL      110        100.0       100.0       100.0
```

```
VARIABLE   INSTRATE   AVE PAYGRADE OF INSTRUCTORS

   CODE
          I
     5.   ** (    1)  0.9 PCT
          I
          I
          I
     6.   ****************************************** (    42)  38.2 PCT
          I
          I
          I
     7.   ************************************************************** (    62)  56.4 PCT
          I
          I
          I
     8.   *** (    2)  1.8 PCT
          I
          I
          I
     0.   **** (    3)  2.7 PCT
 (MISSING) I
          I
          I.........I.........I.........I.........I.........I.........I.........I.........I.........I.........I
          0        10        20        30        40        50        60        70        80        90       100
          FREQUENCY

STATISTICS..

MEAN          6.607        STD ERROR     0.053        MEDIAN        6.669
MODE          7.000        STD DEV       0.545        VARIANCE      0.297
KURTOSIS     -0.661        SKEWNESS     -0.258        RANGE         3.000
MINIMUM       5.000        MAXIMUM       8.000

VALID   OBSERVATIONS -      107
MISSING OBSERVATIONS -        3
```

DATA ANALYSIS. The primary objective in performing the data analysis was to achieve a maximum of quantitative linkages within the Training Process Flow model logic. The data screening and tabulation presented in the preceding tables permitted inspection of key statistics. This section presents the next steps in the analysis process, namely correlation and regression.

Correlation. A Pearson correlation technique was applied in order to identify in a single statistic the strength of association between two variables. Both data from the STUDENT, and COURSE data bases, were subjected separately to this linear correlation technique which provides a coefficient statistic measuring the amount of dispersion around the least squares linear equation and also gives the degree of significance. A two-tailed test of significance was selected, although in most cases an intuitive explicit hypothesis might have been established regarding the sign of the coefficient. While strongly associated variables may lead to conclusions regarding causality, these conclusions must be based on additional information on the nature of the variables since no measure of causality is implicit in the technique. Conversely, however, it can be stated that if two variables are not strongly associated, lack of causality can be concluded subject to the limitations of the technique (linearity) and the data (interval scaling). The discussion of the correlations will be limited since their final application in subsequent regressions will make the more relevant ones apparent. Finally, reference can be made back to the Student Statistical Data, Page 25, and the Course Statistical Data, Page 109, for descriptive information on the variables.

```
FLETRACEN NORVA - STUDENT STATISTICS - PEARSON CORRELATIONS

                   PEARSON CORR    ACTVCODE,STANDING,GRADE,AGE,SERVTIME,RATE,RATETIME,PAYGTIME,
                                   PRINEC,PNECTIME,YRSEDUC,DEGREE,ABRDSHIP,GCT TO TESTGRP,INSTDAYS,
                                   NECAWARD,PCS,CAPACITY,VRBONUS,TYPEENL,NMBRENL,CAREER,NMBRSCOL
                   OPTIONS         5
                   STATISTICS      ALL
```

```
FLETRACEN NORVA - STUDENT STATISTICS - PEARSON CORRELATIONS

FILE    STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

          VARIABLE        CASES              MEAN            STD DEV

          ACTVCODE         1766             5.6213            1.4095
          STANDING         2916             9.4670            1.7626
          GRADE            2915            77.2620           15.0616
          AGE              1689            25.4080            5.7677
          SERVTIME         1695             6.4536            5.9700
          RATE             1766             4.6721            1.6510
          RATETIME         1689             1.8462            2.3276
          PAYGTIME         1916             0.0132            0.1196
          PRINEC           1766             0.7126            0.4527
          PNECTIME         2176             0.9767            1.4678
          YRSEDUC          1793            11.9510            1.0502
          DEGREE           1766             1.5666            0.6276
          ABRDSHIP         1766             0.6618            0.4729
          GCT              1503            55.7506            6.9876
          ARI              1503            52.0056            6.7101
          MECH             1503            50.7530            8.6277
          CLER             1503            51.2568            9.2631
          SHOP             2067            52.0204            6.3899
          AFQT             2029            61.9190           22.0290
          FTST             2678            55.7916            9.5601
          TESTGRP          1503             2.5132            0.7960
          INSTDAYS         1766            16.4055           11.3660
          NECAWARD         1766             1.5690            0.5251
          PCS              1766             1.7576            0.4286
          CAPACITY         1766            20.7702            7.3866
          VRBONUS           779            51.8999            6.0007
          TYPEENL          1766            24.0015           30.6760
          NMBRENL          1766             2.1445            1.1460
          CAREER            951             5.5966            0.8156
          NMBRSCOL         1766             1.0963            1.0651
```

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[illegible]

[illegible]

VARIABLES	CASES	CROSS-PROD DEV	VARIANCE-COVAR	VARIABLES	CASES	CROSS-PROD DEV	VARIANCE-COVAR
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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```
PLETHALIN NIMVA - STUDENT STATISTICS - PEARSON CORRELATIONS
PRINEC    GCT       3363      589.8750     0.1755   PRINEC    ARI       3363      859.0000     0.2555
PRINEC    MECH      3363      688.3125     0.2047   PRINEC    CLER      3363     -993.4375    -0.2955
PRINEC    SHOP      2047      619.8125     0.3000   PRINEC    AFQT      2029     1881.3750     0.9277
PRINEC    ETST      2478     1096.5000     0.4265   PRINEC    TESTGRP   3363      -58.0195    -0.0173
PRINEC    INSTDAYS  3766     2696.3125     0.7162   PRINEC    NECAWARD  3766      105.5664     0.0280
PRINEC    PCS       3766      -84.9508    -0.0225   PRINEC    CAPACITY  3766      193.1133     0.0513
PRINEC    VRBONUS    729     -122.4141    -0.1682   PRINEC    TYPEENL   3766    -1244.7109    -0.3306
PRINEC    NMBRENL   3766      191.4414     0.0508   PRINEC    CAREER     961      -16.5566    -0.0172
PRINEC    NMBRSCOL  3766      650.4258     0.1728   PNECTIME  VRSEDUC   2172      243.6133     0.1122
PNECTIME  DEGREE    2174     -204.8960    -0.0943   PNECTIME  ABRDSHIP  2174     -297.2390    -0.1368
PNECTIME  GCT       1983     3106.8750     1.5675   PNECTIME  ARI       1983     3407.7500     1.7193
PNECTIME  MECH      1983     2843.8125     1.4348   PNECTIME  CLER      1983      134.8125     0.0680
PNECTIME  SHOP      1239     2059.4219     1.6635   PNECTIME  AFQT      1173     6354.7969     5.4222
PNECTIME  ETST      1552     3317.9375     2.1392   PNECTIME  TESTGRP   1983     -258.6523    -0.1305
PNECTIME  INSTDAYS  2174    -4972.2188    -2.2882   PNECTIME  NECAWARD  2174      -47.8342    -0.0220
PNECTIME  PCS       2174     -162.0007    -0.0746   PNECTIME  CAPACITY  2174     4660.5234     2.1447
PNECTIME  VRBONUS    542      111.5352     0.2062   PNECTIME  TYPEENL   2174     7040.1172     3.2398
PNECTIME  NMBRENL   2174     1025.0586     0.4717   PNECTIME  CAREER     570       91.4387     0.1607
PNECTIME  NMBRSCOL  2174      707.7102     0.3258   VRSEDUC   DEGREE    3753     1032.2500     0.2751
VRSEDUC   ABRDSHIP  3753      -73.1563    -0.0195   VRSEDUC   GCT       3362    12338.0000     3.6709
VRSEDUC   ARI       3362    10412.0000     3.0979   VRSEDUC   MECH      3362     3761.0000     1.1190
VRSEDUC   CLER      3362     6924.0000     2.0601   VRSEDUC   SHOP      2047     3278.0000     1.6021
VRSEDUC   AFQT      2029    13232.0000     6.5247   VRSEDUC   ETST      2478     8029.0000     3.2414
VRSEDUC   TESTGRP   3362     -921.6875    -0.2742   VRSEDUC   INSTDAYS  3753     1334.7500     0.3557
VRSEDUC   NECAWARD  3753       70.8125     0.0189   VRSEDUC   PCS       3753      -49.8750    -0.0133
VRSEDUC   CAPACITY  3753    -1098.8125    -0.2929   VRSEDUC   VRBONUS    729     -912.1250    -1.2529
VRSEDUC   TYPEENL   3753    -2959.0000    -0.7886   VRSEDUC   NMBRENL   3753     -412.6250    -0.1100
VRSEDUC   CAREER     961        0.7773     0.0008   VRSEDUC   NMBRSCOL  3753     1161.3125     0.3095
DEGREE    ABRDSHIP  3766      215.0415     0.0571   DEGREE    GCT       3363     3801.8125     1.1308
DEGREE    ARI       3363     2769.8750     0.8239   DEGREE    MECH      3363      736.8125     0.2192
DEGREE    CLER      3363     2719.2500     0.8088   DEGREE    SHOP      2047      685.3125     0.3350
DEGREE    AFQT      2029     3097.2500     1.5272   DEGREE    ETST      2478     1796.0625     0.7251
DEGREE    TESTGRP   3363     -273.0859    -0.0803   DEGREE    INSTDAYS  3766      296.7500     0.0788
DEGREE    NECAWARD  3766     -124.9727    -0.0332   DEGREE    PCS       3766      133.1133     0.0354
DEGREE    CAPACITY  3766    -2354.7500    -0.6254   DEGREE    VRBONUS    729    -1171.0352    -1.6086
DEGREE    TYPEENL   3766   -14491.8125    -3.8491   DEGREE    NMBRENL   3766     -985.1094    -0.2616
DEGREE    CAREER     961      -84.5313    -0.0881   DEGREE    NMBRSCOL  3766     -112.5820    -0.0299
ABRDSHIP  GCT       3363    -1219.1875    -0.3626   ABRDSHIP  ARI       3363    -1351.5000    -0.4020
ABRDSHIP  MECH      3363    -1492.3125    -0.4439   ABRDSHIP  CLER      3363      466.8750     0.1389
ABRDSHIP  SHOP      2047     -615.7500    -0.3010   ABRDSHIP  AFQT      2029    -2892.5625    -1.4263
ABRDSHIP  ETST      2478     -849.4750    -0.3429   ABRDSHIP  TESTGRP   3363      112.0391     0.0333
ABRDSHIP  INSTDAYS  3766    -2806.3984    -0.7454   ABRDSHIP  NECAWARD  3766     -396.8008    -0.1054
ABRDSHIP  PCS       3766      460.0820     0.1222   ABRDSHIP  CAPACITY  3766    -5687.0977    -1.5105
ABRDSHIP  VRBONUS    729     -434.8477    -0.5973   ABRDSHIP  TYPEENL   3766    -4641.7930    -1.2329
ABRDSHIP  NMBRENL   3766     -791.1250    -0.2101   ABRDSHIP  CAREER     961      -43.1040    -0.0449
ABRDSHIP  NMBRSCOL  3766     -632.8594    -0.1676   GCT       ARI       3363   197628.0000    58.7829
GCT       MECH      3363   127349.0000    37.8789   GCT       CLER      3363    81409.0000    24.2144
GCT       SHOP      2047    87829.0000    42.9272   GCT       AFQT      1894   288444.0000   152.3740
GCT       ETST      2477   141433.0000    57.1216   GCT       TESTGRP   3363   -24028.0625    -7.1470
GCT       INSTDAYS  3363    46364.0000    13.7906   GCT       NECAWARD  3363     1540.4375     0.4582
GCT       PCS       3363    -1161.5000    -0.3455   GCT       CAPACITY  3363   -24314.0000    -7.2320
GCT       VRBONUS    662    -9937.0000   -15.0333   GCT       TYPEENL   3363   -42266.0000   -12.5717
GCT       NMBRENL   3363    -4587.0625    -1.3695   GCT       CAREER     865     -644.2500    -0.7457
GCT       NMBRSCOL  3363    22118.6875     6.5790   ARI       MECH      3363   100645.0000    29.9360
ARI       CLER      3363    82425.0000    24.5166   ARI       SHOP      2047    67870.0000    33.1720
ARI       AFQT      1894   249608.0000   131.8584   ARI       ETST      2477   129198.0000    52.1801
ARI       TESTGRP   3363   -15159.7500    -4.5091   ARI       INSTDAYS  3363    44289.0000    13.1734
ARI       NECAWARD  3363     1702.0625     0.5063   ARI       PCS       3363    -1342.0625    -0.3992
ARI       CAPACITY  3363   -14737.0000    -4.3834   ARI       VRBONUS    662    -9906.0000   -14.9864
ARI       TYPEENL   3363   -23131.0000    -6.8807   ARI       NMBRENL   3363    -2103.4375    -0.6257
ARI       CAREER     865     -365.5625    -0.4231   ARI       NMBRSCOL  3363    21312.8125     6.3393
MECH      CLER      3363    21030.0000     6.2552   MECH      SHOP      2047   104628.0000    51.1378
MECH      AFQT      1894   224024.0000   118.3436   MECH      ETST      2477    87308.0000    35.2617
MECH      TESTGRP   3363    -9796.0000    -2.9137   MECH      INSTDAYS  3363    44167.0000    13.1371
MECH      NECAWARD  3363     1292.4375     0.3844   MECH      PCS       3363    -1085.5625    -0.3229
MECH      CAPACITY  3363    -4415.0000    -1.3132   MECH      VRBONUS    662    -5125.0000    -7.7534
MECH      TYPEENL   3363   -12436.0000    -3.6990   MECH      NMBRENL   3363     2248.1250     0.6687
MECH      CAREER     865     -419.4375    -0.4855   MECH      NMBRSCOL  3363    15566.8750     4.6302
CLER      SHOP      2047     8035.0000     3.9272   CLER      AFQT      1894    47734.0000    25.2160
CLER      ETST      2477    41232.0000    16.6527   CLER      TESTGRP   3363    -5827.8125    -1.7334
CLER      INSTDAYS  3363     1574.0000     0.4682   CLER      NECAWARD  3363     -400.8750    -0.1192
CLER      PCS       3363      598.5625     0.1780   CLER      CAPACITY  3363   -13248.0000    -3.9405
CLER      VRBONUS    662    -7073.0000   -10.7005   CLER      TYPEENL   3363      718.0000     0.2136
CLER      NMBRENL   3363    -6739.5000    -2.0046   CLER      CAREER     865      -30.3750    -0.0352
CLER      NMBRSCOL  3363     2044.1875     0.6080   SHOP      AFQT      1830   213818.0000   116.9043
SHOP      ETST      1951    83962.0000    43.0574   SHOP      TESTGRP   2047    -6942.2500    -3.3931
SHOP      INSTDAYS  2047    28487.0000    13.9233   SHOP      NECAWARD  2047      670.0625     0.3275
SHOP      PCS       2047     -615.0000    -0.3006   SHOP      CAPACITY  2047   -10824.0000    -5.2903
SHOP      VRBONUS    921    -4411.0625    -8.4828   SHOP      TYPEENL   2047    30968.0000    15.1359
SHOP      NMBRENL   2047     1285.7500     0.6284   SHOP      CAREER     339     -260.9141    -0.7719
SHOP      NMBRSCOL  2047    11279.5625     5.5130   AFQT      ETST      1808   272040.0000   150.5479
AFQT      TESTGRP   1894   -22681.2500   -11.9816   AFQT      INSTDAYS  2029    97043.0000    47.8516
AFQT      NECAWARD  2029     3565.0000     1.7579   AFQT      PCS       2029    -2963.5625    -1.4613
AFQT      CAPACITY  2029   -26723.0000   -13.1770   AFQT      VRBONUS    432   -12239.5000   -28.3979
AFQT      TYPEENL   2029    99419.0000    49.0232   AFQT      NMBRENL   2029     4769.7500     2.3519
AFQT      CAREER     301     -260.7500    -0.8692   AFQT      NMBRSCOL  2029    40719.7500    20.0788
ETST      TESTGRP   2477   -11024.6875    -4.4526   ETST      INSTDAYS  2478    33054.0000    13.3444
ETST      NECAWARD  2478      902.6875     0.3644   ETST      PCS       2478    -1165.0625    -0.4704
ETST      CAPACITY  2478   -21250.0000    -8.5789   ETST      VRBONUS    537   -10661.1875   -19.8903
ETST      TYPEENL   2478    40225.0000    16.2396   ETST      NMBRENL   2478      305.6875     0.1234
ETST      CAREER     934     -938.7500    -1.0108   ETST      NMBRSCOL  2478    19011.8125     7.6753
TESTGRP   INSTDAYS  3363    -3347.6875    -0.9957   TESTGRP   NECAWARD  3363     -120.0938    -0.0357
TESTGRP   PCS       3363      101.9844     0.0303   TESTGRP   CAPACITY  3363     1792.0625     0.5330
TESTGRP   VRBONUS    662      762.1484     1.1530   TESTGRP   TYPEENL   3363     3376.7500     1.0044
TESTGRP   NMBRENL   3363      327.3594     0.0974   TESTGRP   CAREER     865       43.5039     0.0504
TESTGRP   NMBRSCOL  3363    -1751.3711    -0.5209   INSTDAYS  NECAWARD  3766    15554.3125     4.1313
INSTDAYS  PCS       3766    -4222.5000    -1.1215   INSTDAYS  CAPACITY  3766     1741.0000     0.4624
INSTDAYS  VRBONUS    729     7685.2500    10.5567   INSTDAYS  TYPEENL   3766   -21777.0000    -5.7841
INSTDAYS  NMBRENL   3766    -2312.3125    -0.6142   INSTDAYS  CAREER     961     -294.8281    -0.3071
INSTDAYS  NMBRSCOL  3766    13465.0000     3.5766   NECAWARD  PCS       3766     -378.9180    -0.1006
NECAWARD  CAPACITY  3766     2577.2500     0.6845   NECAWARD  VRBONUS    729      440.3711     0.6049
NECAWARD  TYPEENL   3766     2027.2500     0.5384   NECAWARD  NMBRENL   3766      480.8477     0.1277
NECAWARD  CAREER     961       10.2188     0.0106   NECAWARD  NMBRSCOL  3766      996.5078     0.2647
PCS       CAPACITY  3766    -4974.3750    -1.3212   PCS       VRBONUS    729     -142.9180    -0.1963
PCS       TYPEENL   3766    -2416.5000    -0.6418   PCS       NMBRENL   3766     -400.1133    -0.1063
PCS       CAREER     961       -7.8281    -0.0082   PCS       NMBRSCOL  3766     -619.1523    -0.1644
CAPACITY  VRBONUS    729    14209.8750    19.5191   CAPACITY  TYPEENL   3766    51842.0000    13.7695
CAPACITY  NMBRENL   3766     9518.2500     2.5281   CAPACITY  CAREER     961      632.4375     0.6588
CAPACITY  NMBRSCOL  3766    -2463.2500    -0.6542   VRBONUS   TYPEENL    729    44468.0000    61.0824
VRBONUS   NMBRENL    729     2807.7188     3.8568   VRBONUS   CAREER     249      365.2578     1.4728
VRBONUS   NMBRSCOL   729    -2185.3750    -3.0019   TYPEENL   NMBRENL   3766    30755.7500     8.1689
TYPEENL   CAREER     961     2423.8750     2.5249   TYPEENL   NMBRSCOL  3766     -381.8125    -0.1014
NMBRENL   CAREER     961      213.3281     0.2222   NMBRENL   NMBRSCOL  3766     1752.1523     0.4654
CAREER    NMBRSCOL   961       18.9414     0.0197
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FLETRACEN NORVA - STUDENT STATISTICS - PEARSON CORRELATIONS

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE
PAIR                  PAIR                  PAIR                  PAIR                  PAIR                  PAIR
--------              --------              --------              --------              --------              --------


ACTYCODE   -0.4108   ACTYCODE   -0.4419   ACTYCODE    0.0360   ACTYCODE    0.0231   ACTYCODE   -0.0424   ACTYCODE    0.0151
WITH       N( 2514)   WITH       N( 2515)   WITH       N( 3485)   WITH       N( 3695)   WITH       N( 3766)   WITH       N( 3609)
STANDING SIG .001   GRADE      SIG .001   AGE        SIG .033   SERVTIME SIG .160   RATE       SIG .009   RATETIME SIG .363

ACTYCODE   -0.0393   ACTYCODE   -0.0189   ACTYCODE    0.0125   ACTYCODE   -0.0788   ACTYCODE   -0.0526   ACTYCODE   -0.1031
WITH       N( 1916)   WITH       N( 3766)   WITH       N( 2174)   WITH       N( 3753)   WITH       N( 3766)   WITH       N( 3766)
PAYGTIME SIG .169   PRINEC     SIG .017   PNECTIME SIG .559   YRSEDUC  SIG .001   DEGREE     SIG .001   ABRDSHIP SIG .001

ACTYCODE   -0.1793   ACTYCODE   -0.1971   ACTYCODE   -0.0828   ACTYCODE   -0.0964   ACTYCODE   -0.0995   ACTYCODE   -0.1786
WITH       N( 3361)   WITH       N( 3361)   WITH       N( 3363)   WITH       N( 3363)   WITH       N( 2047)   WITH       N( 2029)
GCT        SIG .001   ARI        SIG .001   MECH       SIG .001   CLER       SIG .001   SHOP       SIG .001   AFQT       SIG .001

ACTYCODE   -0.1413   ACTYCODE    0.1632   ACTYCODE    0.1133   ACTYCODE    0.1284   ACTYCODE   -0.0807   ACTYCODE    0.1689
WITH       N( 2478)   WITH       N( 3363)   WITH       N( 3766)   WITH       N( 3766)   WITH       N( 3766)   WITH       N( 3766)
ETST       SIG .001   TESTGRP  SIG .001   INSTDAYS SIG .001   NECAWARD SIG .001   PCS        SIG .001   CAPACITY SIG .001

ACTYCODE    0.0721   ACTYCODE    0.0179   ACTYCODE    0.0258   ACTYCODE    0.0259   ACTYCODE   -0.1003   STANDING    0.8079
WITH       N(  729)   WITH       N( 3766)   WITH       N( 3766)   WITH       N(  961)   WITH       N( 3766)   WITH       N( 2514)
VRBONUS  SIG .052   TYPEENL  SIG .272   NMBRENL  SIG .114   CAREER   SIG .423   NMBRSCOL SIG .001   GRADE      SIG .001

STANDING    0.0694   STANDING    0.0832   STANDING    0.1804   STANDING    0.0629   STANDING   -0.0220   STANDING   -0.0007
WITH       N( 2346)   WITH       N( 2476)   WITH       N( 2514)   WITH       N( 2409)   WITH       N( 1094)   WITH       N( 2514)
AGE        SIG .002   SERVTIME SIG .001   RATE       SIG .001   RATETIME SIG .002   PAYGTIME SIG .468   PRINEC     SIG .974

STANDING    0.0246   STANDING    0.1432   STANDING    0.0335   STANDING   -0.0203   STANDING    0.2570   STANDING    0.2686
WITH       N( 1537)   WITH       N( 2507)   WITH       N( 2514)   WITH       N( 2514)   WITH       N( 2263)   WITH       N( 2263)
PNECTIME SIG .334   YRSEDUC  SIG .001   DEGREE     SIG .093   ABRDSHIP SIG .309   GCT        SIG .001   ARI        SIG .001

STANDING    0.0816   STANDING    0.1112   STANDING    0.1523   STANDING    0.2645   STANDING    0.1988   STANDING   -0.2376
WITH       N( 2263)   WITH       N( 2263)   WITH       N( 1479)   WITH       N( 1477)   WITH       N( 1729)   WITH       N( 2263)
MECH       SIG .001   CLER       SIG .001   SHOP       SIG .001   AFQT       SIG .001   ETST       SIG .001   TESTGRP  SIG .001

               A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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FLETRACEN NORVA - STUDENT STATISTICS - PEARSON CORRELATIONS

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE
PAIR                  PAIR                  PAIR                  PAIR                  PAIR                  PAIR
--------              --------              --------              --------              --------              --------


STANDING    0.0399   STANDING    0.0400   STANDING    0.0035   STANDING   -0.0187   STANDING    0.0043   STANDING   -0.0063
WITH       N( 2514)   WITH       N( 2514)   WITH       N( 2514)   WITH       N( 2514)   WITH       N(  462)   WITH       N( 2514)
INSTDAYS SIG .046   NECAWARD SIG .045   PCS        SIG .861   CAPACITY SIG .349   VRBONUS  SIG .926   TYPEENL  SIG .753

STANDING    0.0761   STANDING    0.0140   STANDING    0.1289   GRADE      -0.0458   GRADE      -0.0427   GRADE       0.0381
WITH       N( 2514)   WITH       N(  598)   WITH       N( 2514)   WITH       N( 2347)   WITH       N( 2477)   WITH       N( 2515)
NMBRENL  SIG .001   CAREER   SIG .733   NMBRSCOL SIG .001   AGE        SIG .027   SERVTIME SIG .033   RATE       SIG .056

GRADE      -0.0180   GRADE      -0.0120   GRADE       0.0317   GRADE      -0.1492   GRADE       0.1176   GRADE       0.0974
WITH       N( 2409)   WITH       N( 1095)   WITH       N( 2515)   WITH       N( 1537)   WITH       N( 2508)   WITH       N( 2515)
RATETIME SIG .377   PAYGTIME SIG .690   PRINEC     SIG .111   PNECTIME SIG .001   YRSEDUC  SIG .001   DEGREE     SIG .001

GRADE       0.1981   GRADE       0.2289   GRADE       0.2419   GRADE       0.0579   GRADE       0.1310   GRADE       0.1374
WITH       N( 2515)   WITH       N( 2263)   WITH       N( 2263)   WITH       N( 2263)   WITH       N( 2263)   WITH       N( 1479)
ABRDSHIP SIG .001   GCT        SIG .001   ARI        SIG .001   MECH       SIG .006   CLER       SIG .001   SHOP       SIG .001

GRADE       0.2654   GRADE       0.1829   GRADE      -0.2024   GRADE       0.1355   GRADE       0.0619   GRADE       0.2117
WITH       N( 1457)   WITH       N( 1729)   WITH       N( 2263)   WITH       N( 2515)   WITH       N( 2515)   WITH       N( 2515)
AFQT       SIG .001   ETST       SIG .001   TESTGRP  SIG .001   INSTDAYS SIG .001   NECAWARD SIG .002   PCS        SIG .001

GRADE      -0.2970   GRADE      -0.0713   GRADE      -0.0591   GRADE      -0.0572   GRADE      -0.0350   GRADE       0.0849
WITH       N( 2515)   WITH       N(  462)   WITH       N( 2515)   WITH       N( 2515)   WITH       N(  598)   WITH       N( 2515)
CAPACITY SIG .001   VRBONUS  SIG .126   TYPEENL  SIG .003   NMBRENL  SIG .004   CAREER   SIG .393   NMBRSCOL SIG .001

AGE         0.9215   AGE         0.7912   AGE         0.6847   AGE        -0.0129   AGE         0.1178   AGE         0.2872
WITH       N( 3467)   WITH       N( 3485)   WITH       N( 3346)   WITH       N( 1479)   WITH       N( 3485)   WITH       N( 2023)
SERVTIME SIG .001   RATE       SIG .001   RATETIME SIG .001   PAYGTIME SIG .630   PRINEC     SIG .001   PNECTIME SIG .001

AGE         0.0480   AGE        -0.1673   AGE        -0.2984   AGE        -0.0556   AGE        -0.0012   AGE         0.0840
WITH       N( 3485)   WITH       N( 3485)   WITH       N( 3485)   WITH       N( 3104)   WITH       N( 3104)   WITH       N( 3104)
YRSEDUC  SIG .005   DEGREE     SIG .001   ABRDSHIP SIG .001   GCT        SIG .002   ARI        SIG .948   MECH       SIG .001

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FLETRACEN NORVA - STUDENT STATISTICS - PEARSON CORRELATIONS

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - - -

VARIABLE            VARIABLE            VARIABLE            VARIABLE            VARIABLE            VARIABLE
PAIR                PAIR                PAIR                PAIR                PAIR                PAIR
--------            --------            --------            --------            --------            --------


AGE       -0.1189   AGE        0.2117   AGE        0.3084   AGE        0.1318   AGE        0.0372   AGE       -0.0504
WITH     N( 3106)   WITH     N( 2045)   WITH     N( 2029)   WITH     N( 2369)   WITH     N( 3104)   WITH     N( 3485)
CLER     SIG .001   SHOP     SIG .001   AFQT     SIG .001   ETST     SIG .001   TESTGRP  SIG .038   INSTDAYS SIG .003

AGE        0.1544   AGE       -0.1601   AGE        0.2270   AGE        0.2035   AGE        0.2876   AGE        0.0315
WITH     N( 3485)   WITH     N( 3485)   WITH     N( 3485)   WITH     N(  728)   WITH     N( 3485)   WITH     N( 3485)
NECAWARD SIG .001   PCS      SIG .001   CAPACITY SIG .001   VRBONUS  SIG .001   TYPEENL  SIG .001   NMBRENL  SIG .001

AGE        0.2860   AGE        0.2017   SERVTIME   0.8426   SERVTIME   0.6959   SERVTIME  -0.0221   SERVTIME   0.0925
WITH     N(  844)   WITH     N( 3485)   WITH     N( 3695)   WITH     N( 3556)   WITH     N( 1507)   WITH     N( 3695)
CAREER   SIG .001   NMBRSCOL SIG .001   RATE     SIG .001   RATETIME SIG .001   PAYGTIME SIG .391   PRINEC   SIG .001

SERVTIME   0.2426   SERVTIME  -0.0781   SERVTIME   0.3293   SERVTIME  -0.3177   SERVTIME  -0.1007   SERVTIME  -0.0392
WITH     N( 2136)   WITH     N( 3695)   WITH     N( 3695)   WITH     N( 3695)   WITH     N( 3309)   WITH     N( 3309)
PNECTIME SIG .001   YRSEDUC  SIG .001   DEGREE   SIG .001   ABNDSHIP SIG .001   GCT      SIG .001   ARI      SIG .024

SERVTIME   0.0477   SERVTIME  -0.1675   SERVTIME   0.1840   SERVTIME   0.3113   SERVTIME   0.0962   SERVTIME   0.0833
WITH     N( 3309)   WITH     N( 3309)   WITH     N( 2045)   WITH     N( 2029)   WITH     N( 2447)   WITH     N( 3309)
MECH     SIG .001   CLER     SIG .001   SHOP     SIG .001   AFQT     SIG .001   ETST     SIG .005   TESTGRP  SIG .001

SERVTIME  -0.0737   SERVTIME   0.1604   SERVTIME  -0.1705   SERVTIME   0.2471   SERVTIME   0.2714   SERVTIME   0.2675
WITH     N( 3695)   WITH     N( 3695)   WITH     N( 3695)   WITH     N( 3695)   WITH     N(  728)   WITH     N( 3695)
INSTDAYS SIG .001   NECAWARD SIG .001   PCS      SIG .001   CAPACITY SIG .001   VRBONUS  SIG .001   TYPEENL  SIG .001

SERVTIME   0.3155   SERVTIME   0.2030   SERVTIME   0.2224   RATE       0.5237   RATE      -0.0154   RATE       0.1016
WITH     N( 3695)   WITH     N(  943)   WITH     N( 3695)   WITH     N( 3609)   WITH     N( 1516)   WITH     N( 3766)
NMBRENL  SIG .001   CAREER   SIG .001   NMBRSCOL SIG .001   RATETIME SIG .001   PAYGTIME SIG .548   PRINEC   SIG .001

RATE       0.1196   RATE       0.0741   RATE      -0.2493   RATE      -0.3290   RATE       0.1076   RATE       0.1766
WITH     N( 2176)   WITH     N( 3751)   WITH     N( 3766)   WITH     N( 3766)   WITH     N( 3363)   WITH     N( 3363)
PNECTIME SIG .001   YRSEDUC  SIG .001   DEGREE   SIG .001   ABNDSHIP SIG .001   GCT      SIG .001   ARI      SIG .001

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FLETRACEN NORVA - STUDENT STATISTICS - PEARSON CORRELATIONS

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - - -

VARIABLE            VARIABLE            VARIABLE            VARIABLE            VARIABLE            VARIABLE
PAIR                PAIR                PAIR                PAIR                PAIR                PAIR
--------            --------            --------            --------            --------            --------


RATE       0.2012   RATE       0.1091   RATE       0.1320   RATE       0.4517   RATE       0.2735   RATE      -0.1139
WITH     N( 3363)   WITH     N( 3363)   WITH     N( 2047)   WITH     N( 2029)   WITH     N( 2478)   WITH     N( 3363)
MECH     SIG .001   CLER     SIG .001   SHOP     SIG .001   AFQT     SIG .001   ETST     SIG .001   TESTGRP  SIG .001

RATE      -0.0010   RATE       0.1367   RATE      -0.1808   RATE       0.2115   RATE       0.2525   RATE       0.2[illegible]
WITH     N( 3766)   WITH     N( 3766)   WITH     N( 3766)   WITH     N( 3766)   WITH     N(  729)   WITH     N( [illegible]766)
INSTDAYS SIG .951   NECAWARD SIG .001   PCS      SIG .001   CAPACITY SIG .001   VRBONUS  SIG .001   TYPEENL  SIG .001

RATE       0.7768   RATE       0.2513   RATE       0.3097   RATETIME   0.1660   RATETIME   0.1637   RATETIME   0.2034
WITH     N( 3766)   WITH     N(  961)   WITH     N( 3766)   WITH     N( 1470)   WITH     N( 3609)   WITH     N( 2096)
NMBRENL  SIG .001   CAREER   SIG .001   NMBRSCOL SIG .001   PAYGTIME SIG .001   PRINEC   SIG .001   PNECTIME SIG .001

RATETIME  -0.0817   RATETIME  -0.2828   RATETIME  -0.2365   RATETIME  -0.0508   RATETIME  -0.0190   RATETIME   0.0364
WITH     N( 3609)   WITH     N( 3609)   WITH     N( 3609)   WITH     N( 3265)   WITH     N( 3265)   WITH     N( 3265)
YRSEDUC  SIG .001   DEGREE   SIG .001   ABNDSHIP SIG .001   GCT      SIG .001   ARI      SIG .279   MECH     SIG .038

RATETIME   0.1421   RATETIME   0.1123   RATETIME   0.2901   RATETIME   0.0720   RATETIME   0.0362   RATETIME  -0.0284
WITH     N( 3265)   WITH     N( 1982)   WITH     N( 1958)   WITH     N( 2416)   WITH     N( 3265)   WITH     N( 3609)
CLER     SIG .001   SHOP     SIG .001   AFQT     SIG .001   ETST     SIG .001   TESTGRP  SIG .039   INSTDAYS SIG .088

RATETIME   0.1271   RATETIME  -0.1191   RATETIME   0.1653   RATETIME   0.0973   RATETIME   0.2126   RATETIME   0.6288
WITH     N( 3609)   WITH     N( 3609)   WITH     N( 3609)   WITH     N(  722)   WITH     N( 3609)   WITH     N( 3609)
NECAWARD SIG .001   PCS      SIG .001   CAPACITY SIG .001   VRBONUS  SIG .009   TYPEENL  SIG .001   NMBRENL  SIG .001

RATETIME   0.0813   RATETIME   0.1656   PAYGTIME  -0.0352   PAYGTIME  -0.0245   PAYGTIME   0.0060   PAYGTIME  -0.0301
WITH     N(  941)   WITH     N( 3609)   WITH     N( 1516)   WITH     N(  767)   WITH     N( 1516)   WITH     N( 1516)
CAREER   SIG .011   NMBRSCOL SIG .001   PRINEC   SIG .170   PNECTIME SIG .498   YRSEDUC  SIG .875   DEGREE   SIG .241

PAYGTIME  -0.0026   PAYGTIME   0.0410   PAYGTIME   0.0339   PAYGTIME   0.0179   PAYGTIME  -0.0199   PAYGTIME   0.0226
WITH     N( 1516)   WITH     N( 1387)   WITH     N( 1387)   WITH     N( 1387)   WITH     N( 1387)   WITH     N( 1105)
ABNDSHIP SIG .921   GCT      SIG .110   ARI      SIG .207   MECH     SIG .508   CLER     SIG .459   SHOP     SIG .452

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FLETRACEN NORVA - STUDENT STATISTICS - PEARSON CORRELATIONS

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - - -P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S- - - - - - - - - - - - - - -

VARIABLE                VARIABLE                VARIABLE                VARIABLE                VARIABLE                VARIABLE
PAIR                    PAIR                    PAIR                    PAIR                    PAIR                    PAIR
--------                --------                --------                --------                --------                --------


PAYGTIME    0.0261      PAYGTIME    0.0319      PAYGTIME   -0.0393      PAYGTIME   -0.0079      PAYGTIME   -0.0182      PAYGTIME    0.0233
WITH      N( 1174)      WITH      N( 1168)      WITH      N( 1387)      WITH      N( 1516)      WITH      N( 1516)      WITH      N( 1516)
AFQT      SIG .406      ETST      SIG .247      TESTGRP   SIG .189      INSTDAYS  SIG .790      NECAWARD  SIG .479      PCS       SIG .365

PAYGTIME   -0.0288      PAYGTIME    0.0483      PAYGTIME    0.1026      PAYGTIME   -0.0221      PAYGTIME   -0.0421      PAYGTIME   -0.0039
WITH      N( 1516)      WITH      N(  190)      WITH      N( 1516)      WITH      N( 1516)      WITH      N(  251)      WITH      N( 1516)
CAPACITY  SIG .262      VRBONUS   SIG .508      TYPEENL   SIG .001      NMBRENL   SIG .390      CAREER    SIG .507      NMBRSCOL  SIG .880

PRINEC     99.0000      PRINEC     -0.0220      PRINEC     -0.0623      PRINEC     -0.0361      PRINEC      0.0407      PRINEC      0.0653
WITH      N( 2174)      WITH      N( 3751)      WITH      N( 3766)      WITH      N( 3766)      WITH      N( 3363)      WITH      N( 3363)
PNECTIME  SIG .000      YRSEDUC   SIG .178      DEGREE    SIG .001      ABRDSHIP  SIG .027      GCT       SIG .018      ARI       SIG .001

PRINEC      0.0561      PRINEC     -0.0712      PRINEC      0.0791      PRINEC      0.0907      PRINEC      0.1007      PRINEC     -0.0483
WITH      N( 3363)      WITH      N( 3363)      WITH      N( 2047)      WITH      N( 2029)      WITH      N( 2478)      WITH      N( 3363)
MECH      SIG .002      CLER      SIG .001      SHOP      SIG .001      AFQT      SIG .001      ETST      SIG .001      TESTGRP   SIG .005

PRINEC      0.1392      PRINEC      0.1180      PRINEC     -0.1157      PRINEC      0.0153      PRINEC     -0.0500      PRINEC     -0.0353
WITH      N( 3766)      WITH      N( 3766)      WITH      N( 3766)      WITH      N( 3766)      WITH      N(  729)      WITH      N( 3766)
INSTDAYS  SIG .001      NECAWARD  SIG .001      PCS       SIG .001      CAPACITY  SIG .347      VRBONUS   SIG .177      TYPEENL   SIG .030

PRINEC      0.0816      PRINEC     -0.0482      PRINEC      0.2298      PNECTIME    0.0730      PNECTIME   -0.1022      PNECTIME   -0.1932
WITH      N( 3766)      WITH      N(  961)      WITH      N( 3766)      WITH      N( 2172)      WITH      N( 2174)      WITH      N( 2174)
NMBRENL   SIG .001      CAREER    SIG .138      NMBRSCOL  SIG .001      YRSEDUC   SIG .001      DEGREE    SIG .001      ABRDSHIP  SIG .001

PNECTIME    0.1097      PNECTIME    0.1317      PNECTIME    0.1147      PNECTIME    0.0052      PNECTIME    0.1651      PNECTIME    0.2162
WITH      N( 1981)      WITH      N( 1981)      WITH      N( 1981)      WITH      N( 1981)      WITH      N( 1239)      WITH      N( 1173)
GCT       SIG .001      ARI       SIG .001      MECH      SIG .001      CLER      SIG .817      SHOP      SIG .001      AFQT      SIG .001

PNECTIME    0.1503      PNECTIME   -0.1119      PNECTIME   -0.1418      PNECTIME   -0.0302      PNECTIME   -0.1099      PNECTIME    0.1812
WITH      N( 1552)      WITH      N( 1981)      WITH      N( 2174)      WITH      N( 2174)      WITH      N( 2174)      WITH      N( 2174)
ETST      SIG .001      TESTGRP   SIG .001      INSTDAYS  SIG .001      NECAWARD  SIG .159      PCS       SIG .001      CAPACITY  SIG .001

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FLETRACEN NORVA - STUDENT STATISTICS - PEARSON CORRELATIONS

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - - -P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S- - - - - - - - - - - - - - -

VARIABLE                VARIABLE                VARIABLE                VARIABLE                VARIABLE                VARIABLE
PAIR                    PAIR                    PAIR                    PAIR                    PAIR                    PAIR
--------                --------                --------                --------                --------                --------


PNECTIME    0.0192      PNECTIME    0.1207      PNECTIME    0.2405      PNECTIME    0.1100      PNECTIME    0.1272      YRSEDUC     0.4246
WITH      N(  542)      WITH      N( 2174)      WITH      N( 2174)      WITH      N(  570)      WITH      N( 2174)      WITH      N( 3753)
VRBONUS   SIG .760      TYPEENL   SIG .001      NMBRENL   SIG .001      CAREER    SIG .009      NMBRSCOL  SIG .001      DEGREE    SIG .001

YRSEDUC    -0.0400      YRSEDUC     0.1684      YRSEDUC     0.3424      YRSEDUC     0.1278      YRSEDUC     0.2146      YRSEDUC     0.1895
WITH      N( 3753)      WITH      N( 3362)      WITH      N( 3362)      WITH      N( 3362)      WITH      N( 3362)      WITH      N( 2047)
ABRDSHIP  SIG .014      GCT       SIG .001      ARI       SIG .001      MECH      SIG .001      CLER      SIG .001      SHOP      SIG .001

YRSEDUC     0.2998      YRSEDUC     0.3517      YRSEDUC    -0.3318      YRSEDUC     0.0303      YRSEDUC     0.0348      YRSEDUC    -0.0300
WITH      N( 2029)      WITH      N( 2478)      WITH      N( 3362)      WITH      N( 3753)      WITH      N( 3753)      WITH      N( 3753)
AFQT      SIG .001      ETST      SIG .001      TESTGRP   SIG .001      INSTDAYS  SIG .063      NECAWARD  SIG .033      PCS       SIG .066

YRSEDUC    -0.0384      YRSEDUC    -0.1731      YRSEDUC    -0.0371      YRSEDUC    -0.0794      YRSEDUC     0.0011      YRSEDUC     0.1801
WITH      N( 3753)      WITH      N(  729)      WITH      N( 3753)      WITH      N( 3753)      WITH      N(  961)      WITH      N( 3753)
CAPACITY  SIG .019      VRBONUS   SIG .001      TYPEENL   SIG .022      NMBRENL   SIG .001      CAREER    SIG .973      NMBRSCOL  SIG .001

DEGREE      0.1926      DEGREE      0.1873      DEGREE      0.1506      DEGREE      0.0413      DEGREE      0.1391      DEGREE      0.0642
WITH      N( 3766)      WITH      N( 3363)      WITH      N( 3363)      WITH      N( 3363)      WITH      N( 3363)      WITH      N( 2047)
ABRDSHIP  SIG .001      GCT       SIG .001      ARI       SIG .001      MECH      SIG .017      CLER      SIG .001      SHOP      SIG .004

DEGREE      0.1118      DEGREE      0.1192      DEGREE     -0.1604      DEGREE      0.0110      DEGREE     -0.1007      DEGREE      0.1314
WITH      N( 2029)      WITH      N( 2478)      WITH      N( 3363)      WITH      N( 3766)      WITH      N( 3766)      WITH      N( 3766)
AFQT      SIG .001      ETST      SIG .001      TESTGRP   SIG .001      INSTDAYS  SIG .498      NECAWARD  SIG .001      PCS       SIG .001

DEGREE     -0.1149      DEGREE     -0.2873      DEGREE     -0.2966      DEGREE     -0.1097      DEGREE     -0.1874      DEGREE     -0.0286
WITH      N( 3766)      WITH      N(  729)      WITH      N( 3766)      WITH      N( 3766)      WITH      N(  961)      WITH      N( 3766)
CAPACITY  SIG .001      VRBONUS   SIG .001      TYPEENL   SIG .001      NMBRENL   SIG .001      CAREER    SIG .001      NMBRSCOL  SIG .079

ABRDSHIP   -0.0799      ABRDSHIP   -0.0376      ABRDSHIP   -0.1113      ABRDSHIP    0.0318      ABRDSHIP   -0.0826      ABRDSHIP   -0.1539
WITH      N( 3363)      WITH      N( 3363)      WITH      N( 3363)      WITH      N( 3363)      WITH      N( 2047)      WITH      N( 2029)
GCT       SIG .001      ARI       SIG .001      MECH      SIG .001      CLER      SIG .066      SHOP      SIG .001      AFQT      SIG .001

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FLETRACEN NORVA - STUDENT STATISTICS - PEARSON CORRELATIONS

FILE   STUDCHAR (CREATION DATE = 04/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - - -

VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE
PAIR                 PAIR                 PAIR                 PAIR                 PAIR                 PAIR
--------             --------             --------             --------             --------             --------


ABRDSHIP  -0.0779    ABRDSHIP   0.0883    ABRDSHIP  -0.1388    ABRDSHIP  -0.4248    ABRDSHIP   0.6034    ABRDSHIP  -0.4328
WITH     N( 2478)    WITH     N( 3363)    WITH     N( 3766)    WITH     N( 3766)    WITH     N( 3766)    WITH     N( 3766)
ETST      SIG .001   TESTGRP   SIG .001   INSTDAYS SIG .001    NECAWARD SIG .001    PCS       SIG .001   CAPACITY SIG .001

ABRDSHIP  -0.1245    ABRDSHIP  -0.1262    ABRDSHIP  -0.3304    ABRDSHIP  -0.1102    ABRDSHIP  -0.2130    GCT        0.7032
WITH     N(  729)    WITH     N( 3766)    WITH     N( 3766)    WITH     N(  961)    WITH     N( 3766)    WITH     N( 3363)
VRBONUS   SIG .001   TYPEENL   SIG .001   NMBRENL   SIG .001   CAREER    SIG .001   NMBRSCOL SIG .001    ARI       SIG .001

GCT        0.4681    GCT        0.2740    GCT        0.5350    GCT        0.7287    GCT        0.6712    GCT       -0.9395
WITH     N( 3363)    WITH     N( 3363)    WITH     N( 2047)    WITH     N( 1894)    WITH     N( 2477)    WITH     N( 3363)
MECH      SIG .001   CLER      SIG .001   SHOP      SIG .001   AFQT      SIG .001   ETST      SIG .001   TESTGRP   SIG .001

GCT        0.1268    GCT        0.0907    GCT       -0.0835    GCT       -0.1017    GCT       -0.1826    GCT       -0.0654
WITH     N( 3363)    WITH     N( 3363)    WITH     N( 3363)    WITH     N( 3363)    WITH     N(  662)    WITH     N( 3363)
INSTDAYS SIG .001    NECAWARD SIG .001    PCS       SIG .001   CAPACITY SIG .001    VRBONUS   SIG .001   TYPEENL   SIG .001

GCT       -0.1030    GCT       -0.0975    GCT        0.4100    ARI        0.4078    ARI        0.3045    ARI        0.4567
WITH     N( 3363)    WITH     N(  865)    WITH     N( 3363)    WITH     N( 3363)    WITH     N( 3363)    WITH     N( 2047)
NMBRENL   SIG .001   CAREER    SIG .004   NMBRSCOL SIG .001    MECH      SIG .001   CLER      SIG .001   SHOP      SIG .001

ARI        0.6898    ARI        0.6652    ARI       -0.6504    ARI        0.1335    ARI        0.1104    ARI       -0.1063
WITH     N( 1894)    WITH     N( 2477)    WITH     N( 3363)    WITH     N( 3363)    WITH     N( 3363)    WITH     N( 3363)
AFQT      SIG .001   ETST      SIG .001   TESTGRP   SIG .001   INSTDAYS SIG .001    NECAWARD SIG .001    PCS       SIG .001

ARI       -0.0679    ARI       -0.1979    ARI       -0.0396    ARI       -0.0526    ARI       -0.0596    ARI        0.4393
WITH     N( 3363)    WITH     N(  662)    WITH     N( 3363)    WITH     N( 3363)    WITH     N(  865)    WITH     N( 3363)
CAPACITY SIG .001    VRBONUS   SIG .001   TYPEENL   SIG .022   NMBRENL   SIG .002   CAREER    SIG .080   NMBRSCOL SIG .001

MECH       0.0803    MECH       0.7237    MECH       0.6356    MECH       0.4515    MECH      -0.4343    MECH       0.1376
WITH     N( 3363)    WITH     N( 2047)    WITH     N( 1894)    WITH     N( 2477)    WITH     N( 3363)    WITH     N( 3363)
CLER      SIG .001   SHOP      SIG .001   AFQT      SIG .001   ETST      SIG .001   TESTGRP   SIG .001   INSTDAYS SIG .001

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FLETRACEN NORVA - STUDENT STATISTICS - PEARSON CORRELATIONS

FILE   STUDCHAR (CREATION DATE = 04/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - - -

VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE
PAIR                 PAIR                 PAIR                 PAIR                 PAIR                 PAIR
--------             ----- --             --------             --------             --------             --------


MECH       0.0867    MECH      -0.0884    MECH      -0.0210    MECH      -0.0998    MECH      -0.0219    MECH       0.0981
WITH     N( 3363)    WITH     N( 3363)    WITH     N( 3363)    WITH     N(  662)    WITH     N( 3363)    WITH     N( 3363)
NECAWARD SIG .001    PCS       SIG .001   CAPACITY SIG .223    VRBONUS   SIG .010   TYPEENL   SIG .204   NMBRENL   SIG .001

MECH      -0.0736    MECH       0.1286    CLER       0.0500    CLER       0.1216    CLER       0.1896    CLER      -0.2356
WITH     N(  865)    WITH     N( 3363)    WITH     N( 2047)    WITH     N( 1894)    WITH     N( 2477)    WITH     N( 3363)
CAREER    SIG .030   NMBRSCOL SIG .001    SHOP      SIG .024   AFQT      SIG .001   ETST      SIG .001   TESTGRP   SIG .001

CLER       0.0045    CLER      -0.0245    CLER       0.0447    CLER      -0.0576    CLER      -0.1279    CLER       0.0012
WITH     N( 3363)    WITH     N( 3363)    WITH     N( 3363)    WITH     N( 3363)    WITH     N(  662)    WITH     N( 3363)
INSTDAYS SIG .795    NECAWARD SIG .155    PCS       SIG .010   CAPACITY SIG .001    VRBONUS   SIG .001   TYPEENL   SIG .947

CLER      -0.1509    CLER      -0.0047    CLER       0.0393    SHOP       0.6248    SHOP       0.5230    SHOP      -0.5040
WITH     N( 3363)    WITH     N(  865)    WITH     N( 3363)    WITH     N( 1830)    WITH     N( 1951)    WITH     N( 2047)
NMBRENL   SIG .001   CAREER    SIG .891   NMBRSCOL SIG .023    AFQT      SIG .001   ETST      SIG .001   TESTGRP   SIG .001

SHOP       0.1115    SHOP       0.0775    SHOP      -0.0878    SHOP      -0.0810    SHOP      -0.1092    SHOP       0.1095
WITH     N( 2047)    WITH     N( 2047)    WITH     N( 2047)    WITH     N( 2047)    WITH     N(  521)    WITH     N( 2047)
INSTDAYS SIG .001    NECAWARD SIG .001    PCS       SIG .001   CAPACITY SIG .001    VRBONUS   SIG .013   TYPEENL   SIG .001

SHOP       0.1492    SHOP      -0.1167    SHOP       0.3884    AFQT       0.6813    AFQT      -0.6814    AFQT       0.1719
WITH     N( 2047)    WITH     N(  319)    WITH     N( 2047)    WITH     N( 1808)    WITH     N( 1894)    WITH     N( 2029)
NMBRENL   SIG .001   CAREER    SIG .037   NMBRSCOL SIG .001    ETST      SIG .001   TESTGRP   SIG .001   INSTDAYS SIG .001

AFQT       0.1580    AFQT      -0.1691    AFQT      -0.0771    AFQT      -0.1476    AFQT       0.1121    AFQT       0.2271
WITH     N( 2029)    WITH     N( 2029)    WITH     N( 2029)    WITH     N(  432)    WITH     N( 2029)    WITH     N( 2029)
NECAWARD SIG .001    PCS       SIG .001   CAPACITY SIG .001    VRBONUS   SIG .002   TYPEENL   SIG .001   NMBRENL   SIG .001

AFQT      -0.0486    AFQT       0.5447    ETST      -0.6188    ETST       0.1172    ETST       0.0739    ETST      -0.1150
WITH     N(  101)    WITH     N( 2029)    WITH     N( 2477)    WITH     N( 2478)    WITH     N( 2478)    WITH     N( 2478)
CAREER    SIG .403   NMBRSCOL SIG .001    TESTGRP   SIG .001   INSTDAYS SIG .001    NECAWARD SIG .001    PCS       SIG .001

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FLETRACEN NORVA - STUDENT STATISTICS - PEARSON CORRELATIONS

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE
PAIR                 PAIR                 PAIR                 PAIR                 PAIR                 PAIR
--------             --------             --------             --------             --------             --------


ETST        0.1171   ETST       -0.2468   ETST        0.1061   ETST        0.0111   ETST       -0.1403   ETST        0.4651
WITH     N( 2478)    WITH     N(  537)    WITH     N( 2478)    WITH     N( 2478)    WITH     N(  534)    WITH     N( 2478)
CAPACITY SIG .001    VRBONUS  SIG .001    TYPEENL  SIG .001    NMBRENL  SIG .582    CAREER   SIG .001    NMBRSCOL SIG .001

TESTGRP    -0.1104   TESTGRP    -0.0851   TESTGRP     0.0884   TESTGRP     0.0904   TESTGRP     0.1666   TESTGRP     0.0630
WITH     N( 3363)    WITH     N( 3361)    WITH     N( 3363)    WITH     N( 3363)    WITH     N(  662)    WITH     N( 3363)
INSTDAYS SIG .001    NECAWARD SIG .001    PCS      SIG .001    CAPACITY SIG .001    VRBONUS  SIG .001    TYPEENL  SIG .001

TESTGRP     0.0896   TESTGRP     0.0819   TESTGRP    -0.3914   INSTDAYS    0.6922   INSTDAYS   -0.2302   INSTDAYS    0.0055
WITH     N( 3363)    WITH     N(  865)    WITH     N( 3363)    WITH     N( 3766)    WITH     N( 3766)    WITH     N( 3766)
NMBRENL  SIG .001    CAREER   SIG .017    NMBRSCOL SIG .001    NECAWARD SIG .001    PCS      SIG .001    CAPACITY SIG .735

INSTDAYS    0.0886   INSTDAYS   -0.0246   INSTDAYS   -0.0401   INSTDAYS   -0.0347   INSTDAYS    0.1889   NECAWARD   -0.4472
WITH     N(  729)    WITH     N( 3766)    WITH     N( 3766)    WITH     N(  961)    WITH     N( 3766)    WITH     N( 3766)
VRBONUS  SIG .017    TYPEENL  SIG .131    NMBRENL  SIG .014    CAREER   SIG .283    NMBRSCOL SIG .001    PCS      SIG .001

NECAWARD    0.1765   NECAWARD    0.1320   NECAWARD    0.0496   NECAWARD    0.1007   NECAWARD    0.0252   NECAWARD    0.3027
WITH     N( 3766)    WITH     N(  729)    WITH     N( 3766)    WITH     N( 3766)    WITH     N(  961)    WITH     N( 3766)
CAPACITY SIG .001    VRBONUS  SIG .001    TYPEENL  SIG .002    NMBRENL  SIG .001    CAREER   SIG .435    NMBRSCOL SIG .001

PCS        -0.4171   PCS        -0.0420   PCS        -0.0724   PCS        -0.1042   PCS        -0.0206   PCS        -0.2306
WITH     N( 3766)    WITH     N(  729)    WITH     N( 3766)    WITH     N( 3766)    WITH     N(  961)    WITH     N( 3766)
CAPACITY SIG .001    VRBONUS  SIG .257    TYPEENL  SIG .001    NMBRENL  SIG .001    CAREER   SIG .524    NMBRSCOL SIG .001

CAPACITY    0.2587   CAPACITY    0.0902   CAPACITY    0.2941   CAPACITY    0.1136   CAPACITY   -0.0532   VRBONUS     0.7472
WITH     N(  729)    WITH     N( 3766)    WITH     N( 3766)    WITH     N(  961)    WITH     N( 3766)    WITH     N(  729)
VRBONUS  SIG .001    TYPEENL  SIG .001    NMBRENL  SIG .001    CAREER   SIG .001    NMBRSCOL SIG .001    TYPEENL  SIG .001

VRBONUS     0.5250   VRBONUS     0.2599   VRBONUS    -0.1498   TYPEENL     0.2995   TYPEENL     0.2525   TYPEENL    -0.0029
WITH     N(  729)    WITH     N(  249)    WITH     N(  729)    WITH     N( 3766)    WITH     N(  961)    WITH     N( 3766)
NMBRENL  SIG .001    CAREER   SIG .001    NMBRSCOL SIG .001    NMBRENL  SIG .001    CAREER   SIG .001    NMBRSCOL SIG .857

               A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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FLETRACEN NORVA - STUDENT STATISTICS - PEARSON CORRELATIONS

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE
PAIR                 PAIR                 PAIR                 PAIR                 PAIR                 PAIR
--------             --------             --------             --------             --------             --------


NMBRENL     0.2079   NMBRENL     0.2076   CAREER      0.0147
WITH     N(  961)    WITH     N( 3766)    WITH     N(  961)
CAREER   SIG .001    NMBRSCOL SIG .001    NMBRSCOL SIG .648

               A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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UNIVERSITY OF CHICAGO SPSS (LEVEL G) - VERSION 00.7 (12/13/73)

                   RUN NAME        FLETRAGEN NORVA - COURSE STATISTICS
                   GET FILE        CASECHAR
                   PEARSON CORR    PCTFAIL,PCTACSBK,PCTNASBK,PCTNADIS,INSTDAYS TO RECAWARD,
                                   PCTUTIL TO PCTSUBQT,GCT TO INSTRATE
                   OPTIONS         5
                   STATISTICS      ALL
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FLETRACEN NORVA - COURSE STATISTICS

FILE   CASECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

         VARIABLE        CASES                MEAN           STD DEV

         PCTFAIL          110               1.9273            4.4931
         PCTACSBK         110               0.8545            4.7110
         PCTNASBK         110               0.1000            0.7161
         PCTNADIS         110               1.7499            3.1432
         INSTDAYS         110              12.9364           12.1577
         CAPACITY         110              16.3636           13.3220
         ADI              110               1.7636            4.2946
         ALT              110              11.9273            9.5761
         CONVPREW         108              20.7592           62.6718
         UTACTRL          110               1.3091            0.4462
         CASEAGE          110               4.1000            6.1969
         MODMGR           110               0.7364            0.4426
         CASETYPE         110               1.2455            0.6180
         PRIORITY          92              23.5000            4.1136
         PCTLAB           110              44.6545           25.4446
         CMDABLTY         110               9.2636            2.3440
         GRADTYPE         110               2.4636            0.7120
         PASSLEVL         110              72.1727           10.7971
         RECAWARD         110               0.3273            0.4714
         PCTUTIL          110              67.5000           20.6109
         PCTNOSHO         110              10.8455           12.1309
         BACKLOG           92               9.0826            7.0995
         PCTSUBQT          95               6.0421           12.2021
         GCT               92              96.1111            5.0870
         ARI               92              95.2457            5.4518
         MECH              92              90.7857            6.0519
         CLER              92              92.1909            2.6527
         SHOP              92              92.9476            3.9525
         AFQT              91              65.9512           11.9979
         ETST              92              58.3000            5.9606
         STUDAGE           92              20.4048            2.9969
         STUDRATE         109               4.4495            1.0584
         INSTAUT          107              27.4299            9.1167
         INSTAGEN         108               2.1981            1.9829
         INSTRATE         107               4.4075            0.5453
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PLETHAGEN NORVA - COURSE STATISTICS

FILE CRSECHAR (CREATION DATE = 09/02/74) ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

VARIABLES		CASES	CROSS-PROD DEV	VARIANCE-COVAR	VARIABLES		CASES	CROSS-PROD DEV	VARIANCE-COVAR
PCTFAIL	PCTACSBK	110	241.4365	2.2150	PCTFAIL	PCTNASBK	110	64.2000	0.5890
PCTFAIL	PCTNADIS	110	238.7637	2.1909	PCTFAIL	INSTDAYS	110	-335.1099	-3.0744
PCTFAIL	CAPACITY	110	2842.9648	26.0822	PCTFAIL	AOI	110	-4.2908	-0.0394
PCTFAIL	AEI	110	2504.4219	22.9763	PCTFAIL	CONVFREQ	108	3648.4102	34.0973
PCTFAIL	QTACTRL	110	-11.9272	-0.1094	PCTFAIL	CRSEAGE	110	1960.2002	17.9835
PCTFAIL	MODMGR	110	51.2910	0.4706	PCTFAIL	CRSETYPE	110	-76.2363	-0.6994
PCTFAIL	PRIORITY	92	975.2617	10.7172	PCTFAIL	PCTLAB	110	-1982.9609	-18.1923
PCTFAIL	CHGABLTY	110	-60.2908	-0.5531	PCTFAIL	GRADTYPE	110	107.1091	0.9827
PCTFAIL	PASSLEVL	110	6514.3828	59.7650	PCTFAIL	NECAWARD	110	3.0182	0.0277
PCTFAIL	PCTUTIL	110	2190.0000	20.0917	PCTFAIL	PCTNOSHO	110	828.9648	7.6052
PCTFAIL	BACKLOG	62	326.9678	5.3601	PCTFAIL	PCTSUBOT	95	63.5791	0.6764
PCTFAIL	GCT	42	-930.0000	-22.6829	PCTFAIL	ARI	42	-910.0000	-22.1951
PCTFAIL	MECH	42	-629.0000	-15.3415	PCTFAIL	CLER	42	-149.0000	-3.6341
PCTFAIL	SHOP	42	-737.0000	-17.9756	PCTFAIL	AFQT	41	-2302.0469	-57.5512
PCTFAIL	ETST	42	-973.0000	-23.7317	PCTFAIL	STUDAGE	42	27.0000	0.6585
PCTFAIL	STUDRATE	109	-143.4219	-1.3280	PCTFAIL	INSTROT	107	469.0586	4.4251
PCTFAIL	INSTASGN	106	75.5283	0.7193	PCTFAIL	INSTRATE	107	-66.4858	-0.6272
PCTACSBK	PCTNASBK	110	229.6000	2.1064	PCTACSBK	PCTNADIS	110	229.9273	2.1094
PCTACSBK	INSTDAYS	110	1351.5820	12.3998	PCTACSBK	CAPACITY	110	393.5273	3.6103
PCTACSBK	AOI	110	-165.7818	-1.5209	PCTACSBK	AEI	110	798.4365	7.3251
PCTACSBK	CONVFREQ	108	409.6296	3.8283	PCTACSBK	QTACTRL	110	59.9455	0.5500
PCTACSBK	CRSEAGE	110	1149.6001	10.5468	PCTACSBK	MODMGR	110	-28.2182	-0.2589
PCTACSBK	CRSETYPE	110	0.9273	0.0085	PCTACSBK	PRIORITY	92	-678.7390	-7.4587
PCTACSBK	PCTLAB	110	-198.5236	-1.8213	PCTACSBK	CHGABLTY	110	167.2183	1.5341
PCTACSBK	GRADTYPE	110	10.4182	0.0956	PCTACSBK	PASSLEVL	110	845.9639	7.7611
PCTACSBK	NECAWARD	110	63.2366	0.5802	PCTACSBK	PCTUTIL	110	980.0000	8.9908
PCTACSBK	PCTNOSHO	110	-964.4727	-8.8484	PCTACSBK	BACKLOG	62	553.0647	9.0666
PCTACSBK	PCTSUBOT	95	-255.9578	-2.7230	PCTACSBK	GCT	42	90.6680	2.2114
PCTACSBK	ARI	42	75.1465	1.8328	PCTACSBK	MECH	42	309.1445	7.5401
PCTACSBK	CLER	42	-97.9023	-2.3879	PCTACSBK	SHOP	42	300.5273	7.3299
PCTACSBK	AFQT	41	800.5859	20.0146	PCTACSBK	ETST	42	138.9063	3.3880
PCTACSBK	STUDAGE	42	178.9526	4.3647	PCTACSBK	STUDRATE	109	79.7482	0.7384
PCTACSBK	INSTROT	107	-90.3641	-0.8525	PCTACSBK	INSTASGN	106	26.3113	0.2506
PCTACSBK	INSTRATE	107	19.1599	0.1807	PCTNASBK	PCTNADIS	110	6.8000	0.0624
PCTNASBK	INSTDAYS	110	272.0749	2.4961	PCTNASBK	CAPACITY	110	-11.8000	-0.1083
PCTNASBK	AOI	110	-19.4000	-0.1780	PCTNASBK	AEI	110	41.2000	0.3780
PCTNASBK	CONVFREQ	108	-51.3518	-0.4799	PCTNASBK	QTACTRL	110	7.6000	0.0697
PCTNASBK	CRSEAGE	110	233.9000	2.1459	PCTNASBK	MODMGR	110	0.9000	0.0083
PCTNASBK	CRSETYPE	110	-2.7000	-0.0248	PCTNASBK	PRIORITY	92	-72.3261	-0.7948
PCTNASBK	PCTLAB	110	-37.2000	-0.3413	PCTNASBK	CHGABLTY	110	11.1000	0.1018
PCTNASBK	GRADTYPE	110	5.9000	0.0541	PCTNASBK	PASSLEVL	110	458.9001	4.2101
PCTNASBK	NECAWARD	110	7.4000	0.0679	PCTNASBK	PCTUTIL	110	292.5000	2.6835
PCTNASBK	PCTNOSHO	110	-119.5000	-1.0963	PCTNASBK	BACKLOG	62	164.2742	2.6930
PCTNASBK	PCTSUBOT	95	-16.3789	-0.1742	PCTNASBK	GCT	42	-7.6665	-0.1870
PCTNASBK	ARI	42	-18.1428	-0.4425	PCTNASBK	MECH	42	23.3572	0.5697
PCTNASBK	CLER	42	-13.0952	-0.3194	PCTNASBK	SHOP	42	14.9763	0.3653
PCTNASBK	AFQT	41	-4.4636	-0.1116	PCTNASBK	ETST	42	-17.4049	-0.4245
PCTNASBK	STUDAGE	42	-8.4521	-0.2061	PCTNASBK	STUDRATE	109	0.0551	0.0005
PCTNASBK	INSTROT	107	16.2712	0.1535	PCTNASBK	INSTASGN	106	-0.1792	-0.0017
PCTNASBK	INSTRATE	107	0.3178	0.0030	PCTNADIS	INSTDAYS	110	556.0183	5.1011
PCTNADIS	CAPACITY	110	411.6729	3.7768	PCTNADIS	AOI	110	69.3818	0.6365
PCTNADIS	AEI	110	321.7637	2.9520	PCTNADIS	CONVFREQ	108	1926.2227	18.0021
PCTNADIS	QTACTRL	110	19.6546	0.1803	PCTNADIS	CRSEAGE	110	-8.2000	-0.0752
PCTNADIS	MODMGR	110	17.6182	0.1616	PCTNADIS	CRSETYPE	110	-18.1273	-0.1663
PCTNADIS	PRIORITY	92	-8.6086	-0.0946	PCTNADIS	PCTLAB	110	414.3281	3.8012
PCTNADIS	CHGABLTY	110	39.3819	0.3613	PCTNADIS	GRADTYPE	110	18.9819	0.1741
PCTNADIS	PASSLEVL	110	275.4375	2.5269	PCTNADIS	NECAWARD	110	-4.8363	-0.0444
PCTNADIS	PCTUTIL	110	1220.0000	11.1927	PCTNADIS	PCTNOSHO	110	274.6729	2.5199
PCTNADIS	BACKLOG	62	56.9678	0.9339	PCTNADIS	PCTSUBOT	95	73.8423	0.7856
PCTNADIS	GCT	42	7.0000	0.1707	PCTNADIS	ARI	42	34.7148	0.8467
PCTNADIS	MECH	42	-67.7852	-1.6533	PCTNADIS	CLER	42	-6.8555	-0.1672
PCTNADIS	SHOP	42	-21.2109	-0.5173	PCTNADIS	AFQT	41	15.7344	0.3934
PCTNADIS	ETST	42	72.3594	1.7649	PCTNADIS	STUDAGE	42	-34.0713	-0.8310
PCTNADIS	STUDRATE	109	-21.3118	-0.1973	PCTNADIS	INSTROT	107	53.4809	0.5045
PCTNADIS	INSTASGN	106	121.1321	1.1536	PCTNADIS	INSTRATE	107	24.8694	0.2346
INSTDAYS	CAPACITY	110	-6110.3789	-56.0585	INSTDAYS	AOI	110	-1243.0944	-11.4042
INSTDAYS	AEI	110	-1708.1055	-15.6707	INSTDAYS	CONVFREQ	108	-17138.4805	-160.1727
INSTDAYS	QTACTRL	110	390.7617	3.5850	INSTDAYS	CRSEAGE	110	513.1016	4.7074
INSTDAYS	MODMGR	110	-44.4453	-0.4078	INSTDAYS	CRSETYPE	110	-201.4817	-1.8485
INSTDAYS	PRIORITY	92	1399.8242	-15.3827	INSTDAYS	PCTLAB	110	9261.3828	84.9668
INSTDAYS	CHGABLTY	110	926.4492	8.4995	INSTDAYS	GRADTYPE	110	478.6455	4.3912
INSTDAYS	PASSLEVL	110	22017.0117	201.9909	INSTDAYS	NECAWARD	110	460.6909	4.2265
INSTDAYS	PCTUTIL	110	9997.5000	91.7202	INSTDAYS	PCTNOSHO	110	-6130.8789	-56.2466
INSTDAYS	BACKLOG	62	526.6936	8.6343	INSTDAYS	PCTSUBOT	95	997.7689	10.6146
INSTDAYS	GCT	42	670.3359	16.3497	INSTDAYS	ARI	42	791.0000	19.2927
INSTDAYS	MECH	42	352.5000	8.5976	INSTDAYS	CLER	42	-68.6641	-1.6747
INSTDAYS	SHOP	42	503.8359	12.2887	INSTDAYS	AFQT	41	1498.2461	37.4561
INSTDAYS	ETST	42	737.1680	17.9797	INSTDAYS	STUDAGE	42	-181.1641	-4.4186
INSTDAYS	STUDRATE	109	171.4336	1.5873	INSTDAYS	INSTROT	107	-727.3438	-6.8617
INSTDAYS	INSTASGN	106	85.6982	0.8162	INSTDAYS	INSTRATE	107	-38.3399	-0.3617
CAPACITY	AOI	110	2847.9819	26.1283	CAPACITY	AEI	110	11024.9648	101.1465
CAPACITY	CONVFREQ	108	54320.5195	507.6682	CAPACITY	QTACTRL	110	-213.7494	-1.9610
CAPACITY	CRSEAGE	110	2080.2031	19.0844	CAPACITY	MODMGR	110	97.0183	0.8901
CAPACITY	CRSETYPE	110	209.6729	1.9236	CAPACITY	PRIORITY	92	-1124.9102	-12.3616
CAPACITY	PCTLAB	110	-10040.8125	-92.1175	CAPACITY	CHGABLTY	110	-21.0156	-0.1928
CAPACITY	GRADTYPE	110	-506.6172	-4.6479	CAPACITY	PASSLEVL	110	-13213.1602	-121.2216
CAPACITY	NECAWARD	110	-202.4363	-1.8572	CAPACITY	PCTUTIL	110	-4225.0000	-38.7615
CAPACITY	PCTNOSHO	110	3918.8750	35.9530	CAPACITY	BACKLOG	62	246.8386	4.0460
CAPACITY	PCTSUBOT	95	-2673.9141	-28.4459	CAPACITY	GCT	42	-1088.0000	-26.5366
CAPACITY	ARI	42	-1145.0000	-27.9268	CAPACITY	MECH	42	-249.0000	-6.0732
CAPACITY	CLER	42	-288.0000	-7.0244	CAPACITY	SHOP	42	-516.0000	-12.5854
CAPACITY	AFQT	41	-1758.7109	-43.9678	CAPACITY	ETST	42	-1172.0000	-28.5854
CAPACITY	STUDAGE	42	477.0000	11.6341	CAPACITY	STUDRATE	109	-420.5313	-3.8938
CAPACITY	INSTROT	107	1666.6641	15.7232	CAPACITY	INSTASGN	106	1191.2642	11.3454
CAPACITY	INSTRATE	107	31.9180	0.3011	AOI	AEI	110	9.7092	0.0891
AOI	CONVFREQ	108	10612.7070	99.1842	AOI	QTACTRL	110	-39.9636	-0.3666
AOI	CRSEAGE	110	148.6001	1.3633	AOI	MODMGR	110	16.1455	0.1481
AOI	CRSETYPE	110	3.3818	0.0310	AOI	PRIORITY	92	-151.7813	-1.6679
AOI	PCTLAB	110	-1613.9805	-14.8072	AOI	CHGABLTY	110	-43.1455	-0.3958
AOI	GRADTYPE	110	-87.9453	-0.8068	AOI	PASSLEVL	110	-4505.3086	-41.3331
AOI	NECAWARD	110	-53.4909	-0.4907	AOI	PCTUTIL	110	-1490.0000	-13.6697
AOI	PCTNOSHO	110	785.9819	7.2108	AOI	BACKLOG	62	103.2097	1.6920
AOI	PCTSUBOT	95	-213.0620	-2.266	AOI	GCT	42	-25.6665	-0.6260
AOI	ARI	42	-100.8969	-2.45	AOI	MECH	42	158.6431	3.8693

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[illegible] [illegible] - COURSE STATISTICS

ADI       CLER       42      -76.2380     -1.8595   ADI       SHOP       42      -25.3093     -0.6173
ADI       AFQT       41      -30.9021     -0.7726   ADI       ETST       42      -58.2617     -1.4210
ADI       STUDAGE    42      167.1131      4.0761   ADI       STUDRATE  109       46.0369      0.4263
ADI       INSTRQT   107      187.6016      1.7698   ADI       INSTASGN  106      321.9676      3.0664
ADI       INSTRATE  107       34.1497      0.3222   AEI       CONVFREQ  108    28405.2070    265.4690
AEI       UTACTRL   110      -62.9277     -0.5773   AEI       CRSEAGE   110     1752.2031     16.0753
AEI       MODMGR    110       27.2910      0.2504   AEI       CRSETYPE  110       65.7637      0.6033
AEI       PRIORITY   92     -672.4766     -7.3898   AEI       PCTLAB    110    -3695.9609    -33.9079
AEI       CHGABLTY  110      106.7109      0.9790   AEI       GRADTYPE  110     -109.6909     -1.0063
AEI       PASSLEVL  110    -2182.6172    -19.8605   AEI       NECAWARD  110      -33.9817     -0.3118
AEI       PCTUTIL   110      845.0000      7.7523   AEI       PCTNOSHO  110      840.9668      7.7153
AEI       BACKLOG    42      240.0000      3.9395   AEI       PCTSUBQT   95    -1512.0313    -16.0854
AEI       GCT        42     -902.1320    -22.0081   AEI       ARI        42     -838.8593    -20.4599
AEI       MECH       42     -356.8555     -8.7038   AEI       CLER       42     -167.9023     -4.0952
AEI       SHOP       42     -308.6727     -7.5237   AEI       AFQT       41    -1354.9258    -33.8731
AEI       ETST       42     -933.0938    -22.7584   AEI       STUDAGE    42      246.9531      6.0232
AEI       STUDRATE  109     -282.0156     -2.6113   AEI       INSTRQT   107     1178.0859     11.1140
AEI       INSTASGN  106      744.1040      7.0867   AEI       INSTRATE  107      -13.7266     -0.1295
CONVFREQ  UTACTRL   108     -587.9147     -5.4936   CONVFREQ  CRSEAGE   108     2347.5742     21.9399
CONVFREQ  MODMGR    108      249.2571      2.3295   CONVFREQ  CRSETYPE  108      582.5000      5.4439
CONVFREQ  PRIORITY   90   -11825.2160   -132.8676   CONVFREQ  PCTLAB    108    14609.4375    136.5368
CONVFREQ  CHGABLTY  108     -274.0156     -2.5609   CONVFREQ  GRADTYPE  108    -1905.2031    -17.8056
CONVFREQ  PASSLEVL  108   -96362.1875   -900.5811   CONVFREQ  NECAWARD  108     -537.5740     -5.0241
CONVFREQ  PCTUTIL   108    -4860.2500    -45.4229   CONVFREQ  PCTNOSHO  108     7694.0198     71.9067
CONVFREQ  BACKLOG    40     1012.0000     27.3220   CONVFREQ  PCTSUBQT   91    -9458.2891   -105.0901
CONVFREQ  GCT        41     -721.5820    -18.0396   CONVFREQ  ARI        41     -935.5820    -23.3895
CONVFREQ  MECH       41      135.1719      3.3793   CONVFREQ  CLER       41     -363.0938     -9.0773
CONVFREQ  SHOP       41        7.2695      0.1817   CONVFREQ  AFQT       40     -595.3984    -15.2666
CONVFREQ  ETST       41     -899.6938    -22.4923   CONVFREQ  STUDAGE    41      517.7813     12.9445
CONVFREQ  STUDRATE  107    -1459.6797    -13.7706   CONVFREQ  INSTRQT   106     2432.2500     23.1643
CONVFREQ  INSTASGN  109    10029.4008     96.1827   CONVFREQ  INSTRATE  106      415.7578      3.9596
UTACTRL   CRSEAGE   110       38.0001      0.3961   UTACTRL   MODMGR    110       -2.0364     -0.0187
UTACTRL   CRSETYPE  110       -5.3656     -0.0492   UTACTRL   PRIORITY   92      -24.4563     -0.2688
UTACTRL   PCTLAB    110      314.7661      2.8878   UTACTRL   CHGABLTY  110       55.0364      0.5049
UTACTRL   GRADTYPE  110       16.2366      0.1490   UTACTRL   PASSLEVL  110      982.3281      9.0122
UTACTRL   NECAWARD  110        9.8727      0.0906   UTACTRL   PCTUTIL   110      100.0000      0.9174
UTACTRL   PCTNOSHO  110     -327.7656     -3.0068   UTACTRL   BACKLOG    42       -5.5645     -0.0912
UTACTRL   PCTSUBQT   95       34.7791      0.3700   UTACTRL   GCT        42       30.0000      0.7317
UTACTRL   ARI        42       53.0000      1.2927   UTACTRL   MECH       42       -4.5000     -0.1098
UTACTRL   CLER       42       18.0000      0.4390   UTACTRL   SHOP       42        5.5000      0.1341
UTACTRL   AFQT       41       50.0244      1.2506   UTACTRL   ETST       42       53.5000      1.3049
UTACTRL   STUDAGE    42      -13.5000     -0.3293   UTACTRL   STUDRATE  109        8.7150      0.0807
UTACTRL   INSTRQT   107      -87.1868     -0.8225   UTACTRL   INSTASGN  106       -6.5376     -0.0623
UTACTRL   INSTRATE  107       -2.0466     -0.0193   CRSEAGE   MODMGR    110        7.9001      0.0725
CRSEAGE   CRSETYPE  110      -30.7000     -0.2817   CRSEAGE   PRIORITY   92     -739.1484     -8.1229
CRSEAGE   PCTLAB    110      291.8008      2.6771   CRSEAGE   CHGABLTY  110      -69.8999     -0.6413
CRSEAGE   GRADTYPE  110       21.9001      0.2009   CRSEAGE   PASSLEVL  110     2512.9023     23.0541
CRSEAGE   NECAWARD  110       30.4000      0.2789   CRSEAGE   PCTUTIL   110      742.5000      6.8119
CRSEAGE   PCTNOSHO  110     -444.2967     -4.0761   CRSEAGE   BACKLOG    42      765.3711     18.6676
CRSEAGE   PCTSUBQT   95     -492.2862     -5.2371   CRSEAGE   GCT        42     -141.0000     -3.4390
CRSEAGE   ARI        42     -201.2852     -4.9094   CRSEAGE   MECH       42       34.2148      0.8345
CRSEAGE   CLER       42      -73.8555     -1.8014   CRSEAGE   SHOP       42      -30.2109     -0.7369
CRSEAGE   AFQT       41     -444.1680    -11.1042   CRSEAGE   ETST       42     -302.8406     -7.3865
CRSEAGE   STUDAGE    42      -51.0701     -1.2456   CRSEAGE   STUDRATE  109     -133.8440     -1.2393
CRSEAGE   INSTRQT   107      -91.4493     -0.8616   CRSEAGE   INSTASGN  106      -14.3679     -0.1368
CRSEAGE   INSTRATE  107      -22.1096     -0.2086   MODMGR    CRSETYPE  110        4.1182      0.0378
MODMGR    PRIORITY   92       44.7610      0.4919   MODMGR    PCTLAB    110      -62.0181     -0.5690
MODMGR    CHGABLTY  110       -6.3545     -0.0583   MODMGR    GRADTYPE  110       -1.5545     -0.0143
MODMGR    PASSLEVL  110      139.8093      1.2827   MODMGR    NECAWARD  110        0.4909      0.0045
MODMGR    PCTUTIL   110     -117.5000     -1.0780   MODMGR    PCTNOSHO  110       70.5183      0.6470
MODMGR    BACKLOG    42       39.4016      0.9610   MODMGR    PCTSUBQT   95      -57.7788     -0.6147
MODMGR    GCT        42        6.6667      0.1626   MODMGR    ARI        42        4.1451      0.1011
MODMGR    MECH       42      -12.3569     -0.3014   MODMGR    CLER       42        4.0955      0.0999
MODMGR    SHOP       42      -20.9761     -0.5116   MODMGR    AFQT       41      -49.5364     -1.2384
MODMGR    ETST       42        5.4060      0.1318   MODMGR    STUDAGE    42      -25.5476     -0.6231
MODMGR    STUDRATE  109      -18.9611     -0.1756   MODMGR    INSTRQT   107       -6.9624     -0.0657
MODMGR    INSTASGN  106       -9.4528     -0.0900   MODMGR    INSTRATE  107       -1.9909     -0.0188
CRSETYPE  PRIORITY   92      -12.0217     -0.1321   CRSETYPE  PCTLAB    110     -765.6719     -7.0245
CRSETYPE  CHGABLTY  110       22.8818      0.2099   CRSETYPE  GRADTYPE  110      -20.5101     -0.1882
CRSETYPE  PASSLEVL  110     -639.0625     -5.8629   CRSETYPE  NECAWARD  110       -5.8363     -0.0535
CRSETYPE  PCTUTIL   110     -342.5000     -3.1422   CRSETYPE  PCTNOSHO  110      140.1729      1.2860
CRSETYPE  BACKLOG    42      -20.8967     -0.5098   CRSETYPE  PCTSUBQT   95      -79.1367     -0.8419
CRSETYPE  GCT        42       14.0000      0.3415   CRSETYPE  ARI        42       16.4287      0.4007
CRSETYPE  MECH       42       24.9287      0.6080   CRSETYPE  CLER       42        7.2899      0.1777
CRSETYPE  SHOP       42       16.0715      0.3920   CRSETYPE  AFQT       41       65.4392      1.6360
CRSETYPE  ETST       42       28.2144      0.6882   CRSETYPE  STUDAGE    42       17.3572      0.4233
CRSETYPE  STUDRATE  109        2.3120      0.0214   CRSETYPE  INSTRQT   107        4.3926      0.0414
CRSETYPE  INSTASGN  106       -3.1503     -0.0300   CRSETYPE  INSTRATE  107        7.5981      0.0717
PRIORITY  PCTLAB     92     1492.6250     16.4025   PRIORITY  CHGABLTY   92     -185.0859     -2.0339
PRIORITY  GRADTYPE   92       73.6128      0.8092   PRIORITY  PASSLEVL   92     2584.1875     28.3977
PRIORITY  NECAWARD   92      -83.8259     -0.9212   PRIORITY  PCTUTIL    92     1308.3125     14.3771
PRIORITY  PCTNOSHO   92      447.1328      4.9135   PRIORITY  BACKLOG    40      136.0594      2.0512
PRIORITY  PCTSUBQT   80     1242.2031     15.7241   PRIORITY  GCT        39     -388.2539    -10.2172
PRIORITY  ARI        39     -335.0234     -8.8164   PRIORITY  MECH       39     -398.4609    -10.4858
PRIORITY  CLER       39      128.1055      3.3712   PRIORITY  SHOP       39     -473.0234    -12.4480
PRIORITY  AFQT       38    -1184.6289    -32.0170   PRIORITY  ETST       39     -218.2539     -5.7435
PRIORITY  STUDAGE    39      -14.1523     -0.3724   PRIORITY  STUDRATE   91       14.3986      0.1600
PRIORITY  INSTRQT    89      667.5977      7.5861   PRIORITY  INSTASGN   88     -617.9063     -6.0035
PRIORITY  INSTRATE   89      -37.0313     -0.4415   PCTLAB    CHGABLTY  110     -154.9005     -1.4216
PCTLAB    GRADTYPE  110      596.6211      5.4736   PCTLAB    PASSLEVL  110    26815.1875    246.0109
PCTLAB    NECAWARD  110      283.4469      2.6004   PCTLAB    PCTUTIL   110    10395.0000     95.3670
PCTLAB    PCTNOSHO  110    -6560.8711    -60.2699   PCTLAB    BACKLOG    42     2004.5664     36.1732
PCTLAB    PCTSUBQT   95     2519.0016     26.7724   PCTLAB    GCT        42     1814.0000     44.2439
PCTLAB    ARI        42     1899.6250     46.3567   PCTLAB    MECH       42      343.1250      8.3689
PCTLAB    CLER       42      362.7500      8.8476   PCTLAB    SHOP       42      675.9375     16.4863
PCTLAB    AFQT       41     2127.5625     53.1891   PCTLAB    ETST       42     1652.8125     40.3125
PCTLAB    STUDAGE    42    -1151.3359    -28.0818   PCTLAB    STUDRATE  109     -251.1465     -2.3254
PCTLAB    INSTRQT   107    -2177.4375    -20.5419   PCTLAB    INSTASGN  106      921.5391      8.7766
PCTLAB    INSTRATE  107       -4.4133     -0.0415   CHGABLTY  GRADTYPE  110       18.5547      0.1702
CHGABLTY  PASSLEVL  110     3276.1914     29.4096   CHGABLTY  NECAWARD  110        6.5091      0.0597
CHGABLTY  PCTUTIL   110     -127.5000     -1.1697   CHGABLTY  PCTNOSHO  110     -942.5156     -8.6469
CHGABLTY  BACKLOG    42      -20.1761     -0.4921   CHGABLTY  PCTSUBQT   95      673.0100      7.1601
CHGABLTY  GCT        42      124.0000      3.0244   CHGABLTY  ARI        42      236.0000      5.7561
CHGABLTY  MECH       42       -6.5000     -0.1585   CHGABLTY  CLER       42       75.0000      1.8293
CHGABLTY  SHOP       42       54.5000      1.3293   CHGABLTY  AFQT       41      215.1250      5.3781
CHGABLTY  ETST       42      260.5000      6.3537   CHGABLTY  STUDAGE    42      -40.5000     -0.9878
CHGABLTY  STUDRATE  109       40.9616      0.3793   CHGABLTY  INSTRQT   107      271.3945      2.5603
CHGABLTY  INSTASGN  106       25.2656      0.2406   CHGABLTY  INSTRATE  107       -1.4019     -0.0132
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PLFTRACEN NORVA - COURSE STATISTICS

GRADTYPE PASSLEVL   110     1899.9922     17.0441   GRADTYPE NECAWARD   110       15.3001      0.1405
GRADTYPE PCTUTIL    110      497.9000      4.1972   GRADTYPE PCTNOSHO   110     -295.1102     -2.3405
GRADTYPE BACKLOG     62       22.2744      0.3692   GRADTYPE PCTSUBOT    95        2.4001      0.0255
GRADTYPE GCT         62        5.0000      0.1220   GRADTYPE ARI         62       12.5762      0.3067
GRADTYPE MECH        62       -5.9298     -0.1201   GRADTYPE CLER        62       -0.2882     -0.0070
GRADTYPE SHOP        62      -10.0701     -0.2456   GRADTYPE APQT        61      -30.4570     -0.7609
GRADTYPE ETST        62        8.7091      0.1456   GRADTYPE STUDAGE     62      -20.3000     -0.4420
GRADTYPE STUDRATE   109        6.6240      0.0613   GRADTYPE INSTROT    107     -239.4922     -2.2216
GRADTYPE INSTASGN   106      -34.9055     -0.3324   GRADTYPE INSTRATE   107       -5.3738     -0.0507
PASSLEVL NECAWARD   110      664.9820      6.1154   PASSLEVL PCTUTIL    110    19237.6250    159.7047
PASSLEVL PCTNOSHO   110   -16318.6602   -149.7129   PASSLEVL BACKLOG     62      944.5977     15.0131
PASSLEVL PCTSUBOT    95     1997.2773     21.2474   PASSLEVL GCT         62     -160.6250     -3.0177
PASSLEVL ARI         62      990.3125     24.1540   PASSLEVL MECH        62    -1374.6875    -33.5290
PASSLEVL CLER        62      962.2900     13.7454   PASSLEVL SHOP        62    -1259.9375    -30.7302
PASSLEVL APQT        61     2667.1250    -44.1701   PASSLEVL ETST        62      605.8125     14.7758
PASSLEVL STUDAGE     62    -1560.0938    -37.9632   PASSLEVL STUDRATE   109     -276.8164     -2.5631
PASSLEVL INSTROT    107    -6730.8125    -63.2710   PASSLEVL INSTASGN   106    -1433.9336    -13.6560
PASSLEVL INSTRATE   107     -316.2140     -2.9837   NECAWARD PCTUTIL    110      225.0000      2.0642
NECAWARD PCTNOSHO   110     -198.4161     -1.6357   NECAWARD BACKLOG     62        0.1129      0.0019
NECAWARD PCTSUBOT    95       -9.2210     -0.0981   NECAWARD GCT         62       30.6667      0.7480
NECAWARD ARI         62       11.7164      0.7715   NECAWARD MECH        62       20.7144      0.5052
NECAWARD CLER        62       -8.1904     -0.1908   NECAWARD SHOP        62       21.9524      0.5354
NECAWARD APQT        61       79.0712      1.9768   NECAWARD ETST        62       22.1907      0.5412
NECAWARD STUDAGE     62        2.0455      0.0511   NECAWARD STUDRATE   109        3.8160      0.0353
NECAWARD INSTROT    107      -94.0167     -0.5153   NECAWARD INSTASGN   106       -0.7388     -0.0070
NECAWARD INSTRATE   107        0.1454      0.0013   PCTUTIL  PCTNOSHO   110    -5792.5000    -53.1422
PCTUTIL  BACKLOG     62     2710.4061     44.4329   PCTUTIL  PCTSUBOT    95     6091.4219     64.2917
PCTUTIL  GCT         62     -531.6250    -12.9665   PCTUTIL  ARI         62     -308.0125     -7.5097
PCTUTIL  MECH        62      142.1475      3.4600   PCTUTIL  CLER        62     -469.1875    -11.3440
PCTUTIL  SHOP        62      221.2900      4.9085   PCTUTIL  APQT        61     -940.3125    -15.5370
PCTUTIL  ETST        62     -124.7900     -2.9569   PCTUTIL  STUDAGE     62     -102.3700     -2.4970
PCTUTIL  STUDRATE   109      187.8906      1.7397   PCTUTIL  INSTROT    107     1991.0125     18.7907
PCTUTIL  INSTASGN   106     -167.5050     -1.5952   PCTUTIL  INSTRATE   107       42.9451      0.4051
PCTNOSHO BACKLOG     62     -621.6289     -0.8956   PCTNOSHO PCTSUBOT    95    -2857.0719    -30.4000
PCTNOSHO GCT         62     -691.3320    -11.0001   PCTNOSHO ARI         62     -857.0859    -20.9238
PCTNOSHO MECH        62      146.0669      3.4967   PCTNOSHO CLER        62     -325.9822     -7.9468
PCTNOSHO SHOP        62      -86.9727     -1.9847   PCTNOSHO APQT        61     -723.7773    -18.2046
PCTNOSHO ETST        62     -865.5938    -20.6242   PCTNOSHO STUDAGE     62      259.4031      6.3281
PCTNOSHO STUDRATE   109     -201.0547     -1.8610   PCTNOSHO INSTROT    107      145.5000      1.3700
PCTNOSHO INSTASGN   106      188.7719      1.7997   PCTNOSHO INSTRATE   107      -27.9210     -0.2630
BACKLOG  PCTSUBOT    62      366.9517      5.9820   BACKLOG  GCT         20     -192.3984    -10.1264
BACKLOG  ARI         20     -199.0000    -10.2632   BACKLOG  MECH        20      -17.1992     -0.9052
BACKLOG  CLER        20      -40.9077     -2.1367   BACKLOG  SHOP        20      -52.7969     -2.7788
BACKLOG  APQT        19     -469.3125    -17.1040   BACKLOG  ETST        20     -154.3004     -8.1262
BACKLOG  STUDAGE     20     -246.2000    -12.9579   BACKLOG  STUDRATE    61      -82.2622     -1.3710
BACKLOG  INSTROT     59      -32.9005     -0.5666   BACKLOG  INSTASGN    58     -127.4651     -2.2362
BACKLOG  INSTRATE    59       22.7456      0.3922   PCTSUBOT GCT         36      104.0000      5.9700
PCTSUBOT ARI         36      250.7656      7.7600   PCTSUBOT MECH        36       51.3909      1.5862
PCTSUBOT CLER        36        6.9414      0.2103   PCTSUBOT SHOP        36       75.0242      2.2077
PCTSUBOT APQT        35      200.1250      6.1299   PCTSUBOT ETST        36      257.1787      7.7033
PCTSUBOT STUDAGE     36      -45.0239     -1.2171   PCTSUBOT STUDRATE    94      290.7074      6.2080
PCTSUBOT INSTROT     92     7324.7852     80.4871   PCTSUBOT INSTASGN    91     -319.0760     -3.5453
PCTSUBOT INSTRATE    92      106.5220      1.1706   GCT      ARI         62     1062.0000     25.9026
GCT      MECH        62      561.0000     13.2450   GCT      CLER        62      186.3750      4.5045
GCT      SHOP        62      619.3750     15.1067   GCT      APQT        61     2168.6250     54.2156
GCT      ETST        62     1128.6875     27.5890   GCT      STUDAGE     62      -32.6641     -0.7967
GCT      STUDRATE    62       69.6680      1.6017   GCT      INSTROT     59     -713.6133    -10.7702
GCT      INSTASGN    58       57.0986      1.0241   GCT      INSTRATE    59       43.4648      1.1430
ARI      MECH        62      465.6250     11.5079   ARI      CLER        62      265.7500      6.0817
ARI      SHOP        62      577.4375     14.0838   ARI      APQT        61     2177.5625     54.4391
ARI      ETST        62     1277.3125     31.1540   ARI      STUDAGE     62      -62.0995     -1.5331
ARI      STUDRATE    62       60.7144      1.4830   ARI      INSTROT     59     -707.9210    -20.7340
ARI      INSTASGN    58       26.1607      0.7070   ARI      INSTRATE    59       37.6053      0.9920
MECH     CLER        62      -59.2500     -1.3478   MECH     SHOP        62      875.9375     16.0475
MECH     APQT        61     1560.3750     39.1066   MECH     ETST        62      904.8125     12.3120
MECH     STUDAGE     62      175.4449      4.1621   MECH     STUDRATE    62       90.7140      2.2120
MECH     INSTROT     59     -585.2656    -10.1256   MECH     INSTASGN    58       52.2100      1.4111
MECH     INSTRATE    58       44.0781      1.0810   CLER     SHOP        62       35.6200      0.8600
CLER     APQT        61      218.6875      5.4672   CLER     ETST        62      207.5625      7.2376
CLER     STUDAGE     62     -108.2344     -2.6399   CLER     STUDRATE    62      -13.1070     -0.3216
CLER     INSTROT     59     -151.4844     -2.9864   CLER     INSTASGN    58       -9.7344     -0.2031
CLER     INSTRATE    59       11.2852      0.2970   SHOP     APQT        61     1087.1875     40.1707
SHOP     ETST        62      666.9375     16.2660   SHOP     STUDAGE     62      100.6016      2.4008
SHOP     STUDRATE    62       77.9531      1.9013   SHOP     INSTROT     59     -344.8438     -6.0768
SHOP     INSTASGN    58       69.5000      1.0786   SHOP     INSTRATE    59       37.0867      0.9658
APQT     ETST        61     2199.6875     54.9922   APQT     STUDAGE     61      450.6250     11.2656
APQT     STUDRATE    61      292.9766      7.0744   APQT     INSTROT     58    -1681.4727    -30.2890
APQT     INSTASGN    57      221.0920      4.1412   APQT     INSTRATE    58      118.5273      3.2036
ETST     STUDAGE     62      -80.2617     -0.9608   ETST     STUDRATE    62       76.1914      1.0983
ETST     INSTROT     59     -870.3555    -21.7462   ETST     INSTASGN    58       33.9766      0.9183
ETST     INSTRATE    59       61.1099      1.8617   STUDAGE  STUDRATE    62       99.0977      2.4170
STUDAGE  INSTROT     59       61.4049      1.6175   STUDAGE  INSTASGN    58       79.6211      2.1463
STUDAGE  INSTRATE    59       11.1563      0.2706   STUDRATE INSTROT    106      167.9375      1.6009
STUDRATE INSTASGN   105       -7.8379     -0.0734   STUDRATE INSTRATE   106       12.6220      0.1202
INSTROT  INSTASGN   106       18.0781      0.1722   INSTROT  INSTRATE   107       11.0906      0.1043
INSTASGN INSTRATE   106       10.5190      0.1002
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[illegible] - COURSE STATISTICS

FILE   [illegible]   ANALYSIS OF ALL COURSES TAUGHT AT [illegible]

- - - - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - - -

VARIABLE          VARIABLE          VARIABLE          VARIABLE          VARIABLE          VARIABLE
PAIR              PAIR              PAIR              PAIR              PAIR              PAIR
--------          --------          --------          --------          --------          --------

PCTFAIL [illegible]  PCTFAIL [illegible]  PCTFAIL [illegible]  PCTFAIL  -0.0309  PCTFAIL   0.3015  PCTFAIL  -0.0014
WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)
[illegible]       [illegible]       [illegible]       INSTDAYS SIG .000  CAPACITY SIG .001  ADS      SIG .988

PCTFAIL [illegible]  PCTFAIL [illegible]  PCTFAIL  -0.0563  PCTFAIL   0.4458  PCTFAIL   0.1637  PCTFAIL  -0.1608
WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)
ADI [illegible]   [illegible]       [illegible]  SIG .707  [illegible] SIG .001  [illegible] SIG .007  COSETYPE SIG .070

PCTFAIL [illegible]  PCTFAIL  -0.1199  PCTFAIL  -0.0363  PCTFAIL   0.2126  PCTFAIL   0.2091  PCTFAIL   0.0090
WITH  N( [illegible])  WITH  N( 1101)  WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)
PRIORITY [illegible]  PCTLAB  SIG .216  [illegible] SIG .700  [illegible] SIG .020  PASSLEVL SIG .001  [illegible] SIG .929

PCTFAIL   0.1163  PCTFAIL [illegible]  PCTFAIL [illegible]  PCTFAIL  -0.0129  PCTFAIL  -0.5251  PCTFAIL  -0.4777
WITH  N( 1101)    WITH  N( [illegible])  WITH  N( 421)    WITH  N( 951)     WITH  N( 421)     WITH  N( 421)
PCTUTIL SIG .226  [illegible]       [illegible] SIG .232  [illegible] SIG .[illegible]  [illegible] SIG .001  ADI      SIG .001

PCTFAIL [illegible]  PCTFAIL  -0.1017  PCTFAIL [illegible]  PCTFAIL [illegible]  PCTFAIL [illegible]  PCTFAIL   0.0290
WITH  N( 421)     WITH  N( 421)     WITH  N( 421)     WITH  N( 421)     WITH  N( 421)     WITH  N( 421)
[illegible]       [illegible]       [illegible]       [illegible] SIG .001  [illegible] SIG .002  [illegible] SIG .871

PCTFAIL [illegible]  PCTFAIL [illegible]  PCTFAIL [illegible]  PCTFAIL  -0.1752  PCTALSON [illegible]  PCTALSON  0.1424
WITH  N( [illegible])  WITH  N( 1071)  WITH  N( 1061)    WITH  N( 1071)    WITH  N( 1101)    WITH  N( 1101)
[illegible]       INSTRUCT [illegible]  [illegible]    [illegible] SIG .071  [illegible] SIG .001  [illegible] SIG .138

PCTALSON [illegible]  PCTALSON  0.3575  PCTALSON -0.0761  PCTALSON  0.1629  PCTALSON  0.0129  PCTALSON  0.2514
WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1001)    WITH  N( 1101)
INSTDAYS [illegible]  CAPACITY SIG .991  ADS SIG .490  ADI SIG .090  [illegible] SIG .005  [illegible] SIG .008

PCTALSON [illegible]  PCTALSON -0.1261  PCTALSON [illegible]  PCTALSON -0.2066  PCTALSON -0.0165  PCTALSON  0.1309
WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 921)     WITH  N( 1101)    WITH  N( 1101)
[illegible]       [illegible] SIG .196  COSETYPE SIG .477  PRIORITY SIG .023  PCTLAB   SIG .004  [illegible] SIG .148

        A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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[illegible] - COURSE STATISTICS

FILE   [illegible]   ANALYSIS OF ALL COURSES TAUGHT AT [illegible]

- - - - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - - -

VARIABLE          VARIABLE          VARIABLE          VARIABLE          VARIABLE          VARIABLE
PAIR              PAIR              PAIR              PAIR              PAIR              PAIR
--------          --------          --------          --------          --------          --------

PCTALSON [illegible]  PCTALSON [illegible]  PCTALSON  0.2612  PCTALSON [illegible]  PCTALSON -0.1960  PCTALSON  0.2072
WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 421)
[illegible]       [illegible]       [illegible] SIG .006  PCTUTIL [illegible]  [illegible] SIG .100  [illegible] SIG .106

PCTALSON [illegible]  PCTALSON [illegible]  PCTALSON  0.0498  PCTALSON [illegible]  PCTALSON -0.1209  PCTALSON  0.2402
WITH  N( 951)     WITH  N( 421)     WITH  N( 421)     WITH  N( 421)     WITH  N( 421)     WITH  N( 421)
[illegible]       [illegible]       ADI SIG .777      [illegible] SIG .112  [illegible] SIG .007  [illegible] SIG .113

PCTALSON [illegible]  PCTALSON [illegible]  PCTALSON [illegible]  PCTALSON [illegible]  PCTALSON -0.0273  PCTALSON  0.0367
WITH  N( 421)     WITH  N( 421)     WITH  N( 421)     WITH  N( 1091)    WITH  N( 1071)    WITH  N( 1061)
[illegible]       [illegible]       [illegible] SIG .216  [illegible] SIG .120  INSTRUCT SIG .700  [illegible] SIG .708

PCTALSON [illegible]  [illegible]       PCTWASON  0.2067  PCTWASON -0.0111  PCTWASON -0.0906  PCTWASON  0.0551
WITH  N( 1071)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)
INSTDAYS [illegible]  [illegible]   INSTDAYS [illegible]  CAPACITY [illegible]  ADS SIG .[illegible]  ADI SIG .067

PCTWASON [illegible]  PCTWASON [illegible]  PCTWASON [illegible]  PCTWASON  0.0262  PCTWASON -0.0562  PCTWASON -0.1712
WITH  N( 1001)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 921)
[illegible]       [illegible]       [illegible]       [illegible] SIG .707  COSETYPE SIG .[illegible]  PRIORITY SIG .103

PCTWASON [illegible]  PCTWASON [illegible]  PCTWASON  0.1061  PCTWASON  0.1911  PCTWASON  0.2011  PCTWASON  0.1408
WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)    WITH  N( 1101)
PCTLAB [illegible]  [illegible]     [illegible]       PASSLEVL [illegible]  [illegible] SIG .[illegible]  PCTUTIL SIG .142

PCTWASON [illegible]  PCTWASON [illegible]  PCTWASON [illegible]  PCTWASON [illegible]  PCTWASON -0.0700  PCTWASON  0.1224
WITH  N( [illegible])  WITH  N( 421)    WITH  N( 951)     WITH  N( 92)      WITH  N( 421)     WITH  N( 421)
[illegible]       [illegible]       [illegible]       [illegible] SIG .[illegible]  ADI SIG .[illegible]  [illegible] SIG .440

PCTWASON [illegible]  PCTWASON [illegible]  PCTWASON [illegible]  PCTWASON -0.0619  PCTWASON -0.2999  PCTWASON  0.0007
WITH  N( 421)     WITH  N( 421)     WITH  N( 421)     WITH  N( 421)     WITH  N( 421)     WITH  N( 1091)
[illegible]       [illegible]       [illegible]       [illegible]       [illegible] SIG .700  [illegible] SIG .994

        A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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FLETRACEN NORVA - COURSE STATISTICS

FILE   CASECHAR (CREATION DATE = 09/02/76)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - - -

VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE
PAIR                 PAIR                 PAIR                 PAIR                 PAIR                 PAIR
--------             --------             --------             --------             --------             --------

PCTNASGN   0.0232    PCTNASGN  -0.0012    PCTNASGN   0.0076    PCTNADIS   0.1335    PCTNADIS   0.0902    PCTNADIS   0.0477
WITH     N( 107)     WITH     N( 106)     WITH     N( 107)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)
INSTRAUT SIG .811    INSTASGN SIG .990    INSTRATE SIG .938    INSTDAYS SIG .164    CAPACITY SIG .348    ADI      SIG .621

PCTNADIS   0.0941    PCTNADIS   0.0911    PCTNADIS   0.1236    PCTNADIS  -0.0019    PCTNADIS   0.1162    PCTNADIS  -0.0829
WITH     N( 110)     WITH     N( 108)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)
AEI      SIG .328    CONVPREQ SIG .348    OTACTAL  SIG .198    CASEAGE  SIG .984    MODMGR   SIG .227    CASETYPE SIG .389

PCTNADIS  -0.0067    PCTNADIS   0.0916    PCTNADIS   0.0490    PCTNADIS   0.0777    PCTNADIS   0.0261    PCTNADIS  -0.0290
WITH     N(  92)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)
PRIORITY SIG .950    PCTLAB   SIG .341    CHGABLTY SIG .611    GRADTYPE SIG .419    PASSLEVL SIG .786    RECAWARD SIG .764

PCTNADIS   0.1338    PCTNADIS   0.0661    PCTNADIS   0.0484    PCTNADIS   0.0191    PCTNADIS   0.0100    PCTNADIS   0.0463
WITH     N( 110)     WITH     N( 110)     WITH     N(  42)     WITH     N(  99)     WITH     N(  42)     WITH     N(  42)
PCTUTIL  SIG .163    PCTNASGN SIG .491    BACKLOG  SIG .760    PCTSUBJT SIG .851    OCT      SIG .950    AEI      SIG .771

PCTNADIS  -0.1216    PCTNADIS  -0.3180    PCTNADIS  -0.0100    PCTNADIS   0.0097    PCTNADIS   0.0881    PCTNADIS  -0.0026
WITH     N(  42)     WITH     N(  42)     WITH     N(  42)     WITH     N(  61)     WITH     N(  42)     WITH     N(  42)
RECM     SIG .443    CLPM     SIG .404    SMOP     SIG .950    AFQT     SIG .942    ETST     SIG .579    STUDAGE  SIG .987

PCTNADIS  -0.0591    PCTNADIS   0.0179    PCTNADIS   0.1876    PCTNADIS   0.1596    INSTDAYS  -0.3461    INSTDAYS  -0.2210
WITH     N( 109)     WITH     N( 107)     WITH     N( 106)     WITH     N( 107)     WITH     N( 110)     WITH     N( 110)
STUDRATE SIG .541    INSTRAUT SIG .855    INSTASGN SIG .054    INSTRATE SIG .100    CAPACITY SIG .001    ADI      SIG .020

INSTDAYS  -0.1366    INSTDAYS  -0.2102    INSTDAYS   0.6152    INSTDAYS   0.0629    INSTDAYS  -0.0750    INSTDAYS  -0.2308
WITH     N( 110)     WITH     N( 108)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)
AEI      SIG .155    CONVPREQ SIG .029    OTACTAL  SIG .001    CASEAGE  SIG .514    MODMGR   SIG .436    CASETYPE SIG .015

INSTDAYS  -0.2010    INSTDAYS   0.2981    INSTDAYS   0.2981    INSTDAYS   0.5068    INSTDAYS   0.5602    INSTDAYS   0.7575
WITH     N(  92)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)
PRIORITY SIG .055    PCTLAB   SIG .002    CHGABLTY SIG .002    GRADTYPE SIG .001    PASSLEVL SIG .001    RECAWARD SIG .001

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FLETRACEN NORVA - COURSE STATISTICS

FILE   CASECHAR (CREATION DATE = 09/02/76)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - - -

VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE
PAIR                 PAIR                 PAIR                 PAIR                 PAIR                 PAIR
--------             --------             --------             --------             --------             --------

INSTDAYS   0.2835    INSTDAYS  -0.5014    INSTDAYS   0.1308    INSTDAYS   0.0670    INSTDAYS   0.2609    INSTDAYS   0.2876
WITH     N( 110)     WITH     N( 110)     WITH     N(  42)     WITH     N(  99)     WITH     N(  42)     WITH     N(  42)
PCTUTIL  SIG .003    PCTNASGN SIG .001    BACKLOG  SIG .409    PCTSUBJT SIG .519    OCT      SIG .095    AEI      SIG .065

INSTDAYS   0.1725    INSTDAYS  -0.0513    INSTDAYS   0.2525    INSTDAYS   0.2033    INSTDAYS   0.2446    INSTDAYS  -0.1197
WITH     N(  42)     WITH     N(  42)     WITH     N(  42)     WITH     N(  61)     WITH     N(  42)     WITH     N(  42)
RECM     SIG .275    CLPM     SIG .747    SMOP     SIG .107    AFQT     SIG .116    ETST     SIG .119    STUDAGE  SIG .450

INSTDAYS   0.1230    INSTDAYS  -0.0618    INSTDAYS   0.0296    INSTDAYS  -0.0561    CAPACITY   0.4621    CAPACITY   0.7029
WITH     N( 109)     WITH     N( 107)     WITH     N( 106)     WITH     N( 107)     WITH     N( 110)     WITH     N( 110)
STUDRATE SIG .203    INSTRAUT SIG .529    INSTASGN SIG .763    INSTRATE SIG .570    ADI      SIG .001    AEI      SIG .001

CAPACITY   0.6044    CAPACITY  -0.4171    CAPACITY   0.2327    CAPACITY   0.1509    CAPACITY   0.2261    CAPACITY  -0.1508
WITH     N( 108)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)     WITH     N(  92)
CONVPREQ SIG .001    OTACTAL  SIG .001    CASEAGE  SIG .014    MODMGR   SIG .115    CASETYPE SIG .017    PRIORITY SIG .149

CAPACITY [illegible]  CAPACITY  -0.1962    CAPACITY  -0.4096    CAPACITY  -0.2950    CAPACITY  -0.2958    CAPACITY  -0.1093
WITH     N( 110)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)     WITH     N( 110)
PCTLAB   SIG .004    CHGABLTY SIG .040    GRADTYPE SIG .001    PASSLEVL SIG .002    RECAWARD SIG .002    PCTUTIL  SIG .256

CAPACITY   0.2225    CAPACITY   0.0470    CAPACITY  -0.1652    CAPACITY  -0.5070    CAPACITY  -0.5066    CAPACITY  -0.1717
WITH     N( 110)     WITH     N(  42)     WITH     N(  99)     WITH     N(  42)     WITH     N(  42)     WITH     N(  42)
PCTNASGN SIG .019    BACKLOG  SIG .770    PCTSUBJT SIG .102    OCT      SIG .001    AEI      SIG .001    RECM     SIG .277

CAPACITY  -0.4516    CAPACITY  -0.3640    CAPACITY  -0.4386    CAPACITY  -0.5486    CAPACITY   0.4498    CAPACITY  -0.2760
WITH     N(  42)     WITH     N(  42)     WITH     N(  61)     WITH     N(  42)     WITH     N(  42)     WITH     N( 109)
CLPM     SIG .003    SMOP     SIG .018    AFQT     SIG .001    ETST     SIG .001    STUDAGE  SIG .003    STUDRATE SIG .004

CAPACITY  -0.1287    CAPACITY   0.4251    CAPACITY   0.0412    ADI        0.0022    ADI        0.3712    ADI       -0.1861
WITH     N( 107)     WITH     N( 106)     WITH     N( 107)     WITH     N( 110)     WITH     N( 108)     WITH     N( 110)
INSTRAUT SIG .186    INSTASGN SIG .001    INSTRATE SIG .673    AEI      SIG .982    CONVPREQ SIG .001    OTACTAL  SIG .052

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[illegible] - COURSE STATISTICS

FILE  [illegible]  ANALYSIS OF ALL COURSES TAUGHT AT [illegible]

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE            VARIABLE            VARIABLE            VARIABLE            VARIABLE            VARIABLE
PAIR                PAIR                PAIR                PAIR                PAIR                PAIR
--------            --------            --------            --------            --------            --------

[illegible]

          A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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[illegible] - COURSE STATISTICS

FILE  [illegible]  ANALYSIS OF ALL COURSES TAUGHT AT [illegible]

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE            VARIABLE            VARIABLE            VARIABLE            VARIABLE            VARIABLE
PAIR                PAIR                PAIR                PAIR                PAIR                PAIR
--------            --------            --------            --------            --------            --------

[illegible]

          A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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[illegible]

[illegible]

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FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE            VARIABLE            VARIABLE            VARIABLE            VARIABLE            VARIABLE
PAIR                PAIR                PAIR                PAIR                PAIR                PAIR
--------            --------            --------            --------            --------            --------


PRIORITY  -0.1335   PCTLAB    -0.0299   PCTLAB     0.3276   PCTLAB     0.3412   PCTLAB     0.2383   PCTLAB     0.1929
WITH      N(  891)  WITH      N( 1101)  WITH      N( 1101)  WITH      N( 1101)  WITH      N( 1101)  WITH      N( 1101)
INSTRATE  SIG .212  CHGABLTY  SIG .789  GRADTYPE  SIG .001  PASSLEVL  SIG .001  NECAWARD  SIG .013  PCTUTIL   SIG .111

PCTLAB    -0.2119   PCTLAB     0.1037   PCTLAB     0.0876   PCTLAB     0.4449   PCTLAB     0.4350   PCTLAB     0.1057
WITH      N( 1101)  WITH      N(  421)  WITH      N(  951)  WITH      N(  421)  WITH      N(  421)  WITH      N(  421)
PCTNOSHO  SIG .024  BACKLOG   SIG .193  PCTSUBGT  SIG .198  GCT       SIG .003  ARI       SIG .004  MECH      SIG .505

PCTLAB     0.1706   PCTLAB     0.2134   PCTLAB     0.2240   PCTLAB     0.3455   PCTLAB    -0.4795   PCTLAB    -0.0949
WITH      N(  421)  WITH      N(  421)  WITH      N(  411)  WITH      N(  421)  WITH      N(  421)  WITH      N( 1091)
CLER      SIG .280  SHOP      SIG .175  APQT      SIG .199  ETST      SIG .025  STUDAGE   SIG .001  STUDRATE  SIG .326

PCTLAB     0.0947   PCTLAB     0.1302   PCTLAB    -0.0034   CHGABLTY   0.1019   CHGABLTY   0.3931   CHGABLTY   0.0940
WITH      N( 1071)  WITH      N( 1061)  WITH      N( 1071)  WITH      N( 1101)  WITH      N( 1101)  WITH      N( 1101)
INSTROT   SIG .327  INSTASGN  SIG .051  INSTRATE  SIG .972  GRADTYPE  SIG .290  PASSLEVL  SIG .001  NECAWARD  SIG .575

CHGABLTY  -0.0187   CHGABLTY  -0.3040   CHGABLTY  -0.0331   CHGABLTY   0.2350   CHGABLTY   0.2623   CHGABLTY   0.4660
WITH      N( 1101)  WITH      N( 1101)  WITH      N(  421)  WITH      N(  951)  WITH      N(  421)  WITH      N(  421)
PCTUTIL   SIG .866  PCTNOSHO  SIG .001  BACKLOG   SIG .798  PCTSUBGT  SIG .022  GCT       SIG .093  ARI       SIG .002

CHGABLTY  -0.0173   CHGABLTY   0.3041   CHGABLTY   0.1484   CHGABLTY   0.1984   CHGABLTY   0.4697   CHGABLTY  -0.1495
WITH      N(  421)  WITH      N(  421)  WITH      N(  421)  WITH      N(  411)  WITH      N(  421)  WITH      N(  421)
MECH      SIG .914  CLER      SIG .050  SHOP      SIG .348  APQT      SIG .214  ETST      SIG .002  STUDAGE   SIG .350

CHGABLTY   0.1521   CHGABLTY   0.1190   CHGABLTY   0.0515   CHGABLTY  -0.0103   GRADTYPE   0.7785   GRADTYPE   0.4181
WITH      N( 1091)  WITH      N( 1071)  WITH      N( 1061)  WITH      N( 1071)  WITH      N( 1101)  WITH      N( 1101)
STUDRATE  SIG .114  INSTROT   SIG .222  INSTASGN  SIG .600  INSTRATE  SIG .916  PASSLEVL  SIG .001  NECAWARD  SIG .001

GRADTYPE   0.2213   GRADTYPE  -0.2707   GRADTYPE   0.0714   GRADTYPE   0.0029   GRADTYPE   0.0577   GRADTYPE   0.1355
WITH      N( 1101)  WITH      N( 1101)  WITH      N(  421)  WITH      N(  951)  WITH      N(  421)  WITH      N(  421)
PCTUTIL   SIG .020  PCTNOSHO  SIG .004  BACKLOG   SIG .982  PCTSUBGT  SIG .978  GCT       SIG .717  ARI       SIG .392

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FLETRACEN NORVA - COURSE STATISTICS

FILE   CRSECHAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE            VARIABLE            VARIABLE            VARIABLE            VARIABLE            VARIABLE
PAIR                PAIR                PAIR                PAIR                PAIR                PAIR
--------            --------            --------            --------            --------            --------


GRADTYPE   0.0714   GRADTYPE  -0.0061   GRADTYPE  -0.1496   GRADTYPE  -0.1513   GRADTYPE   0.0668   GRADTYPE  -0.5166
WITH      N(  421)  WITH      N(  421)  WITH      N(  421)  WITH      N(  411)  WITH      N(  421)  WITH      N(  421)
MECH      SIG .651  CLER      SIG .968  SHOP      SIG .344  APQT      SIG .345  ETST      SIG .674  STUDAGE   SIG .001

GRADTYPE   0.0826   GRADTYPE  -0.1199   GRADTYPE  -0.2329   GRADTYPE  -0.1295   PASSLEVL   0.6218   PASSLEVL   0.1708
WITH      N( 1091)  WITH      N( 1071)  WITH      N( 1061)  WITH      N( 1071)  WITH      N( 1101)  WITH      N( 1101)
STUDRATE  SIG .393  INSTROT   SIG .001  INSTASGN  SIG .016  INSTRATE  SIG .184  NECAWARD  SIG .001  PCTUTIL   SIG .074

PASSLEVL  -0.4011   PASSLEVL   0.1065   PASSLEVL   0.0620   PASSLEVL  -0.0261   PASSLEVL   0.1500   PASSLEVL  -0.2801
WITH      N( 1101)  WITH      N(  421)  WITH      N(  951)  WITH      N(  421)  WITH      N(  421)  WITH      N(  421)
PCTNOSHO  SIG .001  BACKLOG   SIG .410  PCTSUBGT  SIG .551  GCT       SIG .870  ARI       SIG .343  MECH      SIG .072

PASSLEVL   0.1750   PASSLEVL  -0.2632   PASSLEVL  -0.1853   PASSLEVL   0.0838   PASSLEVL  -0.4244   PASSLEVL  -0.0788
WITH      N(  421)  WITH      N(  421)  WITH      N(  411)  WITH      N(  421)  WITH      N(  421)  WITH      N( 1091)
CLER      SIG .268  SHOP      SIG .092  APQT      SIG .246  ETST      SIG .598  STUDAGE   SIG .005  STUDRATE  SIG .415

PASSLEVL  -0.2249   PASSLEVL  -0.2235   PASSLEVL  -0.1771   NECAWARD   0.1646   NECAWARD  -0.2510   NECAWARD   0.0007
WITH      N( 1071)  WITH      N( 1061)  WITH      N( 1071)  WITH      N( 1101)  WITH      N( 1101)  WITH      N(  421)
INSTROT   SIG .020  INSTASGN  SIG .021  INSTRATE  SIG .068  PCTUTIL   SIG .086  PCTNOSHO  SIG .008  BACKLOG   SIG .996

NECAWARD  -0.0171   NECAWARD   0.2908   NECAWARD   0.2837   NECAWARD   0.2467   NECAWARD  -0.1490   NECAWARD   0.2680
WITH      N(  951)  WITH      N(  421)  WITH      N(  421)  WITH      N(  421)  WITH      N(  421)  WITH      N(  421)
PCTSUBGT  SIG .868  GCT       SIG .062  ARI       SIG .072  MECH      SIG .115  CLER      SIG .346  SHOP      SIG .086

NECAWARD   0.3264   NECAWARD   0.1794   NECAWARD   0.0337   NECAWARD   0.0707   NECAWARD  -0.1208   NECAWARD  -0.0075
WITH      N(  411)  WITH      N(  421)  WITH      N(  421)  WITH      N( 1091)  WITH      N( 1071)  WITH      N( 1061)
APQT      SIG .017  ETST      SIG .256  STUDAGE   SIG .832  STUDRATE  SIG .465  INSTROT   SIG .215  INSTASGN  SIG .939

NECAWARD   0.0128   PCTUTIL   -0.1846   PCTUTIL    0.3024   PCTUTIL    0.1380   PCTUTIL   -0.0962   PCTUTIL   -0.0511
WITH      N( 1071)  WITH      N( 1101)  WITH      N(  421)  WITH      N(  951)  WITH      N(  421)  WITH      N(  421)
INSTRATE  SIG .896  PCTNOSHO  SIG .086  BACKLOG   SIG .017  PCTSUBGT  SIG .180  GCT       SIG .545  ARI       SIG .748

               A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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PLETHACEN NORVA - COURSE STATISTICS

FILE   CASPCMAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

- - - - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - - -

VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE
PAIR                  PAIR                  PAIR                  PAIR                  PAIR                  PAIR
--------              --------              --------              --------              --------              --------

PCTUTIL     0.0323    PCTUTIL    -0.1614    PCTUTIL     0.0469    PCTUTIL    -0.0422    PCTUTIL    -0.0161    PCTUTIL    -0.0314
WITH      N(  42)     WITH      N(  42)     WITH      N(  42)     WITH      N(  41)     WITH      N(  42)     WITH      N(  42)
MECH      SIG .839    CLER      SIG .307    SHOP      SIG .768    AFQT      SIG .795    ETST      SIG .919    STUDAGE   SIG .843

PCTUTIL     0.0619    PCTUTIL     0.0767    PCTUTIL    -0.0298    PCTUTIL     0.0277    PCTNOSHO   -0.1094    PCTNOSHO   -0.1962
WITH      N( 109)     WITH      N( 107)     WITH      N( 106)     WITH      N( 107)     WITH      N(  62)     WITH      N(  95)
STUDRATE  SIG .522    INSTROT   SIG .432    INSTASGN  SIG .762    INSTRATE  SIG .777    BACKLOG   SIG .397    PCTSUBOT  SIG .057

PCTNOSHO   -0.2328    PCTNOSHO   -0.4129    PCTNOSHO    0.0917    PCTNOSHO   -0.3224    PCTNOSHO   -0.0431    PCTNOSHO   -0.1609
WITH      N(  42)     WITH      N(  42)     WITH      N(  42)     WITH      N(  42)     WITH      N(  42)     WITH      N(  41)
GCT       SIG .138    ARI       SIG .007    MECH      SIG .563    CLER      SIG .037    SHOP      SIG .786    AFQT      SIG .315

PCTNOSHO   -0.3717    PCTNOSHO    0.2272    PCTNOSHO   -0.1445    PCTNOSHO    0.0123    PCTNOSHO    0.0739    PCTNOSHO   -0.0395
WITH      N(  42)     WITH      N(  42)     WITH      N( 109)     WITH      N( 107)     WITH      N( 106)     WITH      N( 107)
ETST      SIG .015    STUDAGE   SIG .148    STUDRATE  SIG .134    INSTROT   SIG .900    INSTASGN  SIG .452    INSTRATE  SIG .686

BACKLOG     0.1458    BACKLOG    -0.3412    BACKLOG    -0.3937    BACKLOG    -0.0376    BACKLOG    -0.1224    BACKLOG    -0.1245
WITH      N(  62)     WITH      N(  20)     WITH      N(  20)     WITH      N(  20)     WITH      N(  20)     WITH      N(  20)
PCTSUBOT  SIG .256    GCT       SIG .141    ARI       SIG .086    MECH      SIG .875    CLER      SIG .607    SHOP      SIG .601

BACKLOG    -0.4244    BACKLOG    -0.2879    BACKLOG    -0.4178    BACKLOG    -0.1699    BACKLOG    -0.0147    BACKLOG    -0.1208
WITH      N(  19)     WITH      N(  20)     WITH      N(  20)     WITH      N(  61)     WITH      N(  59)     WITH      N(  58)
AFQT      SIG .070    ETST      SIG .218    STUDAGE   SIG .066    STUDRATE  SIG .191    INSTROT   SIG .912    INSTASGN  SIG .366

BACKLOG     0.0997    PCTSUBOT    0.3483    PCTSUBOT    0.3710    PCTSUBOT    0.1069    PCTSUBOT    0.0170    PCTSUBOT    0.1855
WITH      N(  59)     WITH      N(  34)     WITH      N(  34)     WITH      N(  34)     WITH      N(  34)     WITH      N(  34)
INSTRATE  SIG .452    GCT       SIG .047    ARI       SIG .031    MECH      SIG .547    CLER      SIG .924    SHOP      SIG .293

PCTSUBOT    0.2129    PCTSUBOT    0.3473    PCTSUBOT   -0.0898    PCTSUBOT    0.3265    PCTSUBOT    0.6620    PCTSUBOT   -0.1362
WITH      N(  33)     WITH      N(  34)     WITH      N(  34)     WITH      N(  94)     WITH      N(  92)     WITH      N(  91)
AFQT      SIG .239    ETST      SIG .044    STUDAGE   SIG .617    STUDRATE  SIG .001    INSTROT   SIG .001    INSTASGN  SIG .198

              A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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PLETHACEN NORVA - COURSE STATISTICS

FILE   CASECMAR (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

- - - - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - - -

VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE
PAIR                  PAIR                  PAIR                  PAIR                  PAIR                  PAIR
--------              --------              --------              --------              --------              --------

PCTSUBOT    0.1751    GCT         0.9338    GCT         0.6424    GCT         0.3404    GCT         0.7512    GCT         0.8786
WITH      N(  92)     WITH      N(  42)     WITH      N(  42)     WITH      N(  42)     WITH      N(  42)     WITH      N(  41)
INSTRATE  SIG .095    ARI       SIG .001    MECH      SIG .001    CLER      SIG .027    SHOP      SIG .001    AFQT      SIG .001

GCT         0.9064    GCT        -0.0483    GCT         0.3337    GCT        -0.6449    GCT         0.1490    GCT         0.4034
WITH      N(  42)     WITH      N(  42)     WITH      N(  42)     WITH      N(  39)     WITH      N(  38)     WITH      N(  39)
ETST      SIG .001    STUDAGE   SIG .762    STUDRATE  SIG .031    INSTROT   SIG .001    INSTASGN  SIG .372    INSTRATE  SIG .011

ARI         0.9119    ARI         0.6482    ARI         0.6836    ARI         0.8222    ARI         0.9573    ARI        -0.0938
WITH      N(  42)     WITH      N(  42)     WITH      N(  42)     WITH      N(  41)     WITH      N(  42)     WITH      N(  42)
MECH      SIG .001    CLER      SIG .001    SHOP      SIG .001    AFQT      SIG .001    ETST      SIG .001    STUDAGE   SIG .554

ARI         0.2880    ARI        -0.4470    ARI         0.0950    ARI         0.3230    MECH       -0.1254    MECH        0.8772
WITH      N(  42)     WITH      N(  39)     WITH      N(  38)     WITH      N(  39)     WITH      N(  42)     WITH      N(  42)
STUDRATE  SIG .064    INSTROT   SIG .004    INSTASGN  SIG .570    INSTRATE  SIG .045    CLER      SIG .429    SHOP      SIG .001

MECH        0.8096    MECH        0.5090    MECH        0.3428    MECH        0.9789    MECH       -0.4424    MECH        0.2614
WITH      N(  41)     WITH      N(  42)     WITH      N(  42)     WITH      N(  42)     WITH      N(  39)     WITH      N(  38)
AFQT      SIG .001    ETST      SIG .001    STUDAGE   SIG .026    STUDRATE  SIG .001    INSTROT   SIG .005    INSTASGN  SIG .113

MECH        0.4894    CLER        0.0829    CLER        0.1784    CLER        0.4583    CLER       -0.3321    CLER       -0.1286
WITH      N(  39)     WITH      N(  42)     WITH      N(  41)     WITH      N(  42)     WITH      N(  42)     WITH      N(  42)
INSTRATE  SIG .002    SHOP      SIG .602    AFQT      SIG .264    ETST      SIG .002    STUDAGE   SIG .032    STUDRATE  SIG .417

CLER       -0.2603    CLER       -0.0748    CLER        0.1993    SHOP        0.8803    SHOP        0.6895    SHOP        0.2074
WITH      N(  39)     WITH      N(  38)     WITH      N(  39)     WITH      N(  41)     WITH      N(  42)     WITH      N(  42)
INSTROT   SIG .109    INSTASGN  SIG .655    INSTRATE  SIG .224    AFQT      SIG .001    ETST      SIG .001    STUDAGE   SIG .188

SHOP        0.5130    SHOP       -0.3999    SHOP        0.3515    SHOP        0.4455    AFQT        0.8265    AFQT        0.3190
WITH      N(  42)     WITH      N(  39)     WITH      N(  38)     WITH      N(  39)     WITH      N(  41)     WITH      N(  41)
STUDRATE  SIG .001    INSTROT   SIG .012    INSTASGN  SIG .030    INSTRATE  SIG .004    ETST      SIG .001    STUDAGE   SIG .042

              A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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FLETRACEN NORVA - COURSE STATISTICS

FILE   CNSFCMAN (CREATION DATE = 09/02/74)   ANALYSIS OF ALL COURSES TAUGHT AT FTC NORVA

- - - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE                VARIABLE                VARIABLE                VARIABLE                VARIABLE                VARIABLE
PAIR                    PAIR                    PAIR                    PAIR                    PAIR                    PAIR
--------                --------                --------                --------                --------                --------

AFQT          0.6171    AFQT         -0.5700    AFQT          0.3736    AFQT          0.4758    ETST         -0.0549    ETST          0.3300
WITH       N(   41)     WITH       N(   38)     WITH       N(   37)     WITH       N(   38)     WITH       N(   42)     WITH       N(   42)
STUDRATE  SIG .001      INSTROT   SIG .001      INSTASGN  SIG .023      INSTRATE  SIG .003      STUDAGE   SIG .730      STUDRATE  SIG .033

ETST          0.6294    ETST          0.1127    ETST          0.3217    STUDAGE       0.4552    STUDAGE       0.0960    STUDAGE       0.9405
WITH       N(   39)     WITH       N(   38)     WITH       N(   39)     WITH       N(   42)     WITH       N(   39)     WITH       N(   38)
INSTROT   SIG .001      INSTASGN  SIG .500      INSTRATE  SIG .046      STUDRATE  SIG .002      INSTROT   SIG .561      INSTASGN  SIG .001

STUDAGE       0.1791    STUDRATE      0.1451    STUDRATE     -0.0347    STUDRATE      0.2074    INSTROT       0.0095    INSTROT       0.0210
WITH       N(   39)     WITH       N(  106)     WITH       N(  105)     WITH       N(  106)     WITH       N(  106)     WITH       N(  107)
INSTRATE  SIG .275      INSTROT   SIG .138      INSTASGN  SIG .725      INSTRATE  SIG .033      INSTASGN  SIG .923      INSTRATE  SIG .830

INSTASGN      0.0952
WITH       N(  106)
INSTRATE  SIG .332

            A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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Regression. The objective in analyzing the relationships between paired variables (correlation) was to provide insight into possible multivariate models which could be developed through the use of multiple linear regression. Guidance regarding the minimum levels for the Coefficient of Correlation (r) and Coefficient of Determination (r^2) statistics was obtained from the U.S. Navy Manpower Survey Program, Volume III - Guide to the Preparation of Staffing Standards for Activities Ashore, OPNAV 12P-8, p. V-9. A recommended minimum level for (r) is .7071 and for (r^2) is .50. This would indicate that a particular equation explains at least 50 percent of the variation in the dependent variable. Unfortunately, very few of the correlations had that strength of association and the multivariate models attempted through the regressions were only able to explain about 10 to 20 percent of variation in the dependent variable. Some refinements will be made to tune the models in Phase III; one major focus will be to transform some of the variables to produce a higher degree of linearity. The following, however, shows the development and application of one multivariate model to predict academic disenrollments in one particular course.

Percent Academic Failures - Course 4552. The TPF model was designed to permit insertion or modification of a multivariate model by course to predict the percent of academic failures under various settings of the relevant input variables. The structure is general enough that the predictive equations can be changed (relevant variables or their coefficients) merely by updating the statistical data base.

The first step in preparing the academic failure predictive model for course 4552 was to recode the Student Action Code (ACTYCODE) variable so that all graduates, accelerated graduates, and non-academic failures equaled zero, and all academic failures equaled one. The result was a direct reading from the variable value indicating academic failures, i.e., no academic failures, ACTYCODE=0.00; all academic failures, ACTYCODE=1.00; half the students failed academically, ACTYCODE=.50.

The second step was to run the Pearson correlations for all variables on course 4552. The output from this SPSS run is shown in the following printout, Percent Academic Failures - Course 4552 - Sample Statistical Data. Suitable potential predictive variables were selected, i.e., relatively highly correlated, significant, and with a sufficient number of cases. GCT, ARI, and NMBRSCOL (Number of Formal Schools Previously Attended) were selected as input for the regression.

The third step was to run the regression as also shown in the following printout. An important consideration was to ensure that the sample produced a failure pattern similar to that for the course with all cases considered. A sample of 169 cases produced a failure percentage of 11.24 which was relatively close to the overall course failure percentage of 11.76. The regression on ACTYCODE with GCT, ARI, and NMBRSCOL produced the following model.

$$\text{Failure (ACTYCODE)} = .86816 - .00427(\text{GCT}) - .00804(\text{ARI}) - .01573(\text{NUBRSCOL})$$

The average values used in the solution for the equation were:

GCT = 59.8639
ARI = 57.5207
NMBRSCOL = 2.4024

The result was:

Failure (ACTYCODE) = .1123 or 11.23%

A typical question that might be posed to the TPF would be:

> What effect on student throughput and AOB would result from student input with GCT and ARI test scores 5 percent over the present average?

The TPF model data base would be modified to reflect the 5 percent increase in GCT and ARI. The new values would be:

GCT = 62.8571 (+ 5 percent)
ARI = 60.3967 (+ 5 percent)
NMBRSCOL = 2.4024 (unchanged)

Rerunning the model would produce the following change in failure rate.

Failure (ACTYCODE) = .86816-.00427(62.8671)-.00804(60.3967)-.01573(2.4024)
= .86816 - .26840 - .48559 - .03779
= .0764 or 7.64%

The change from the original failure value is:

11.23 percent - 7.64 percent = 3.59 percent

This change in failure rate would then propagate through the TPF model causing an increase in throughput and Average On-Board (AOB) figures.

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PERCENT ACADEMIC
FAILURES
COURSE 4552
SAMPLE
STATISTICAL
DATA

(Because of the number of charts to be displayed in this section, separate figure numbers have not been assigned.)

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UNIVERSITY OF CHICAGO SPSS (LEVEL G) - VERSION 00.7 (12/13/71)

                    RUN NAME        FLETRACEN NORVA - STUDENT STATISTICS - SELECTED COURSE 4552
                    GET FILE        STUDCHAR
                    SELECT IF       (COURSE EQ 4552)
                    RECODE          ACTYCODE (1,2,3,9=0)(9=1)
                    VALUE LABELS    ACTYCODE (0) NON-FAILURES (1) FAILURES
                    MISSING VALUES  ACTYCODE (4,8)
                    TRANSFORM
                    PEARSON CORR    ACTYCODE,STANDING,GRADE,AGE,SERVTIME,RATE,RATETIME,PAYGTIME,
                                    PRIMEC,PMECTIME,VASEDUC,DEGREE,ABRDSHIP,GCT TO TESTGRP,INSTDAYS,
                                    NECAWARD,PCS,CAPACITY,VRBONUS,TYPEENL,NMBRENL,CAREER,NMBRSCOL
                    OPTIONS         3
                    STATISTICS      ALL
```

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FLETRACEN NORVA - STUDENT STATISTICS - SELECTED COURSE 4552

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

        VARIABLE        CASES             MEAN             STD DEV

        ACTYCODE          187           0.1176              0.3231
        STANDING          143           9.5245              0.7396
        GRADE             143          86.3388              6.5456
        AGE               293          21.9533              4.3618
        SERVTIME          296           4.1561              4.1914
        RATE              298           4.4496              1.1466
        RATETIME          297           1.1245              1.6910
        PAYGTIME          119           0.0168              0.1291
        PRIMEC            298           0.7868              0.4103
        PMECTIME          148           0.5338              0.8915
        VASEDUC           298          12.0233              0.8272
        DEGREE            298           1.7248              0.5900
        ABRDSHIP          298           0.8566              0.3512
        GCT               230          57.9870              8.9304
        ARI               230          55.7565              8.1810
        MECH              230          55.9304              7.5291
        CLER              230          50.8826              9.3136
        SHOP              202          56.6955              6.3864
        AFQT              208          72.6010             18.4910
        FTST              204          59.6127              7.4267
        TESTGRP           230           2.2391              0.7815
        INSTDAYS          298          40.0000              0.0
        NECAWARD          298           2.0000              0.0
        PCS               298           1.9302              0.2553
        CAPACITY          298          16.0000              0.0
        VRBONUS            99          34.6364              9.8424
        TYPEENL           298          20.1318             13.0503
        NMBRENL           298           1.7442              0.9063
        CAREER             59           3.3390              0.8011
        NMBRSCOL          298           2.1047              1.5832
```

```
FLETRACEN NORVA - STUDENT STATISTICS - SELECTED COURSE 4992

FILE    STUDCHAR (CREATION DATE = 09/12/74)    ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLES              CASES   CROSS-PROD DEV   VARIANCE-COVAR   VARIABLES              CASES   CROSS-PROD DEV   VARIANCE-COVAR

ACTYCODE STANDING       123        -1.5935          -0.0131      ACTYCODE GRADE          123       -17.3022          -0.1418
ACTYCODE AGE            182        55.2090           0.1945      ACTYCODE SERVTIME       185        50.9081           0.2767
ACTYCODE RATE           187        -5.8025          -0.0316      ACTYCODE RATETIME       186        19.2796           0.1042
ACTYCODE PAYGTIME        82        -0.1951          -0.0024      ACTYCODE PRINEC         187        -3.6470          -0.0196
ACTYCODE PNECTIME       113         2.3186          -0.0207      ACTYCODE VRSEDUC        187        -5.6470          -0.0304
ACTYCODE DEGREE         187        -8.1765          -0.0440      ACTYCODE ABRDSHIP       187        -4.1765          -0.0225
ACTYCODE GCT            169      -128.4141          -0.7644      ACTYCODE ARI            169      -128.8935          -0.7672
ACTYCODE MECH           169       -29.6804          -0.1767      ACTYCODE CLER           169       -63.3193          -0.3769
ACTYCODE SHOP           190       -90.2798          -0.3374      ACTYCODE AFQT           154      -223.9609          -1.4638
ACTYCODE ETST           191       -72.2719          -0.4818      ACTYCODE TESTGRP        169        11.6509           0.0694
ACTYCODE INSTDAYS       187         0.0              0.0         ACTYCODE NECAWARD       187         0.0              0.0
ACTYCODE PCS            187         1.1177           0.0060      ACTYCODE CAPACITY       187         0.0              0.0
ACTYCODE VRBONUS         77         5.2727           0.0694      ACTYCODE TYPEENL        187       118.9414           0.6395
ACTYCODE NMBRENL        187        10.6471           0.0572      ACTYCODE CAREER          50         3.9000           0.0796
ACTYCODE NMBRSCOL       187       -20.1765          -0.1085      STANDING GRADE          143       582.8750           4.1048
STANDING AGE            142        52.5262           0.3711      STANDING SERVTIME       142        43.8203           0.3108
STANDING RATE           143        40.6320           0.2861      STANDING RATETIME       142        23.4648           0.1664
STANDING PAYGTIME        68         0.1594           0.0023      STANDING PRINEC         143         1.4897           0.0105
STANDING PNECTIME       109        25.4221           0.2354      STANDING VRSEDUC        143        19.2344           0.1355
STANDING DEGREE         143         2.7344           0.0193      STANDING ABRDSHIP       143        -1.0837          -0.0076
STANDING GCT            130       249.6875           1.9356      STANDING ARI            130       296.6875           2.2999
STANDING MECH           130        97.3750           0.7548      STANDING CLER           130        83.2109           0.6450
STANDING SHOP           122       105.0625           0.8683      STANDING AFQT           126       579.5000           4.6360
STANDING ETST           126       285.3125           2.3034      STANDING TESTGRP        130       -21.5537          -0.1671
STANDING INSTDAYS       143         0.0              0.0         STANDING NECAWARD       143         0.0              0.0
STANDING PCS            143        -1.5591          -0.0110      STANDING CAPACITY       143         0.0              0.0
STANDING VRBONUS         57        -9.3828          -0.1676      STANDING TYPEENL        143       199.1016           1.4021
STANDING NMBRENL        143         9.5176           0.0670      STANDING CAREER          37        -2.4592          -0.0683
STANDING NMBRSCOL       143        59.9932           0.4225      GRADE    AGE            142       444.0000           3.1489
GRADE    SERVTIME       142       401.8984           2.8503      GRADE    RATE           143       426.6523           3.0046
GRADE    RATETIME       142       177.8164           1.2611      GRADE    PAYGTIME        69         1.9532           0.0287
GRADE    PRINEC         143        23.2070           0.1634      GRADE    PNECTIME       109       236.2695           2.1877
GRADE    VRSEDUC        143       127.1875           0.8957      GRADE    DEGREE         143        22.0820           0.1555
GRADE    ABRDSHIP       143        13.8945           0.0978      GRADE    GCT            130      2317.7500          17.9670
GRADE    ARI            130      2497.1250          19.3575      GRADE    MECH           130       691.0625           5.3571
GRADE    CLER           130       698.0625           5.4113      GRADE    SHOP           122       684.9375           5.6606
GRADE    AFQT           126      3667.3125          29.3385      GRADE    ETST           124      2157.7500          17.5427
GRADE    TESTGRP        130      -210.1289          -1.6289      GRADE    INSTDAYS       143        -0.6250          -0.0044
GRADE    NECAWARD       143         0.1016           0.0007      GRADE    PCS            143        12.6016           0.0887
GRADE    CAPACITY       143         0.0625           0.0004      GRADE    VRBONUS         57       -86.0000          -1.5357
GRADE    TYPEENL        143      1621.1250          11.4164      GRADE    NMBRENL        143        63.6328           0.4481
GRADE    CAREER          37         2.5781           0.0716      GRADE    NMBRSCOL       143       574.3789           4.0449
AGE      SERVTIME       252      3135.5859          12.4924      AGE      RATE           253       835.0078           3.3135
AGE      RATETIME       252      1027.8359           4.0950      AGE      PAYGTIME       119         2.6134           0.0221
AGE      PRINEC         253        36.3281           0.1442      AGE      PNECTIME       147       121.8777           0.8348
AGE      VRSEDUC        253       111.0625           0.4407      AGE      DEGREE         253      -227.3711          -0.9023
AGE      ABRDSHIP       253      -159.1836          -0.6317      AGE      GCT            226     -2387.3125         -10.6103
AGE      ARI            226      -935.8750          -4.1594      AGE      MECH           226       -89.6250          -0.3983
AGE      CLER           226     -1471.2500          -6.5389      AGE      SHOP           202       307.6250           1.5305
AGE      AFQT           208      1144.0000           5.5266      AGE      ETST           204       284.3125           1.4006
AGE      TESTGRP        226       185.6953           0.8253      AGE      INSTDAYS       253         0.0625           0.0002
AGE      NECAWARD       253         0.0              0.0         AGE      PCS            253         5.9609           0.0237
AGE      CAPACITY       253         0.0              0.0         AGE      VRBONUS         99       139.5000           1.4235
AGE      TYPEENL        253      8772.0625          34.8098      AGE      NMBRENL        253       698.7188           2.7727
AGE      CAREER          58        84.2070           1.4773      AGE      NMBRSCOL       253        64.8281           0.2573
SERVTIME RATE           256       888.5000           3.4843      SERVTIME RATETIME       256      1219.6250           4.7828
SERVTIME PAYGTIME       119        -0.5442          -0.0046      SERVTIME PRINEC         256         4.5938           0.0180
SERVTIME PNECTIME       147        92.8845           0.6362      SERVTIME VRSEDUC        256       -84.9375          -0.3331
SERVTIME DEGREE         256      -259.0625          -1.0159      SERVTIME ABRDSHIP       256      -160.2188          -0.6283
SERVTIME GCT            228     -2492.0859         -10.9784      SERVTIME ARI            228      -970.0508          -4.2734
SERVTIME MECH           228      -360.3945          -1.5876      SERVTIME CLER           228     -1939.7622          -8.5451
SERVTIME SHOP           202       -26.9688          -0.1342      SERVTIME AFQT           208       137.2422           0.6630
SERVTIME ETST           203      -231.2383          -1.1447      SERVTIME TESTGRP        228       193.1843           0.8510
SERVTIME INSTDAYS       256         0.0              0.0         SERVTIME NECAWARD       256         0.0              0.0
SERVTIME PCS            256         0.8125           0.0032      SERVTIME CAPACITY       256         0.0              0.0
SERVTIME VRBONUS         99       125.4570           1.2802      SERVTIME TYPEENL        256      7609.8125          29.8424
SERVTIME NMBRENL        256       846.9375           3.3213      SERVTIME CAREER          58        76.2588           1.3379
SERVTIME NMBRSCOL       256       178.9375           0.7017      RATE     RATETIME       257       216.8057           0.8469
RATE     PAYGTIME       119         1.6471           0.0140      RATE     PRINEC         258         8.7288           0.0340
RATE     PNECTIME       148        71.8311           0.4886      RATE     VRSEDUC        258        25.3047           0.0985
RATE     DEGREE         258       -43.0776          -0.1676      RATE     ABRDSHIP       258       -32.3643          -0.1259
RATE     GCT            230       -92.8242          -0.4053      RATE     ARI            230       318.9141           1.3926
RATE     MECH           230       181.2617           0.7915      RATE     CLER           230      -469.4336          -2.0499
RATE     SHOP           202       213.9023           1.0642      RATE     AFQT           208       997.3633           4.8182
RATE     ETST           204       401.0742           1.9757      RATE     TESTGRP        230        -1.5217          -0.0066
RATE     INSTDAYS       258         0.0              0.0         RATE     NECAWARD       258         0.0              0.0
RATE     PCS            258         0.0911           0.0004      RATE     CAPACITY       258         0.0              0.0
RATE     VRBONUS         99        31.6367           0.3228      RATE     TYPEENL        258      2397.7148           9.3296
RATE     NMBRENL        258       184.6746           0.7186      RATE     CAREER          59        11.3225           0.1952
RATE     NMBRSCOL       258       190.8606           0.7427      RATETIME PAYGTIME       119         1.7815           0.0151
RATETIME PRINEC         257        38.8603           0.1518      RATETIME PNECTIME       147        16.3878           0.1122
RATETIME VRSEDUC        257       -19.7471          -0.0771      RATETIME DEGREE         257       -74.2839          -0.2902
RATETIME ABRDSHIP       257       -67.3950          -0.2633      RATETIME GCT            229      -654.6992          -2.8715
RATETIME ARI            229      -123.0430          -0.5397      RATETIME MECH           229       108.4766           0.4758
RATETIME CLER           229      -180.9883          -0.7938      RATETIME SHOP           202       -48.2852          -0.2402
RATETIME AFQT           208       512.8633           2.4776      RATETIME ETST           203      -135.1016          -0.6688
RATETIME TESTGRP        229        52.5156           0.2303      RATETIME INSTDAYS       257         0.0              0.0
RATETIME NECAWARD       257         0.0              0.0         RATETIME PCS            257         5.2415           0.0205
RATETIME CAPACITY       257         0.0              0.0         RATETIME VRBONUS         99       -22.8164          -0.2328
RATETIME TYPEENL        257      2228.0117           8.7032      RATETIME NMBRENL        257       251.4670           0.9823
RATETIME CAREER          58        20.5691           0.3609      RATETIME NMBRSCOL       257        65.0117           0.2540
PAYGTIME PRINEC         119         0.8571           0.0073      PAYGTIME PNECTIME        67        -0.1343          -0.0020
PAYGTIME VRSEDUC        119         3.0336           0.0257      PAYGTIME DEGREE         119         0.2521           0.0021
PAYGTIME ABRDSHIP       119        -1.7647          -0.0150      PAYGTIME GCT            109        19.9174           0.1844
PAYGTIME ARI            109        12.0000           0.1111      PAYGTIME MECH           109         6.1468           0.0569
PAYGTIME CLER           109         0.0275           0.0003      PAYGTIME SHOP           104         1.6154           0.0157
PAYGTIME AFQT           108        38.7963           0.3626      PAYGTIME ETST           102        12.7647           0.1264
PAYGTIME TESTGRP        109        -1.3055          -0.0120      PAYGTIME INSTDAYS       119         0.0              0.0
PAYGTIME NECAWARD       119         0.0              0.0         PAYGTIME PCS            119         0.1513           0.0013
PAYGTIME CAPACITY       119         0.0              0.0         PAYGTIME VRBONUS         35         1.2572           0.0370
PAYGTIME TYPEENL        119        10.1261           0.0858      PAYGTIME NMBRENL        119         0.1597           0.0014
PAYGTIME CAREER          25         0.0              0.0         PAYGTIME NMBRSCOL       119         3.9328           0.0333
PRINEC   PNECTIME       148         0.0              0.0         PRINEC   VRSEDUC        258         5.2793           0.0205
PRINEC   DEGREE         258        -0.1355          -0.0005      PRINEC   ABRDSHIP       258         3.1124           0.0121
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PRINEC	GCT	230	38.4141	0.1677
PRINEC	MECH	230	38.0711	0.1697
PRINEC	SHOP	202	34.1406	0.1699
PRINEC	ETST	204	12.6719	0.0624
PRINEC	INSTDAYS	258	0.0	0.0
PRINEC	PCS	258	-1.8372	-0.0071
PRINEC	VRBONUS	99	-7.0000	-0.0714
PRINEC	NMBRENL	258	4.9304	0.0192
PRINEC	NMBRSCOL	258	52.7559	0.2053
PNECTIME	DEGREE	148	14.1487	0.0962
PNECTIME	GCT	139	208.7734	1.5129
PNECTIME	MECH	139	192.7422	1.3967
PNECTIME	SHOP	130	166.9883	1.2965
PNECTIME	ETST	132	262.8203	2.0063
PNECTIME	INSTDAYS	148	0.0	0.0
PNECTIME	PCS	148	3.4730	0.0234
PNECTIME	VRBONUS	69	74.5654	1.0965
PNECTIME	NMBRENL	148	29.2230	0.1988
PNECTIME	NMBRSCOL	148	96.2703	0.6549
VRSEDUC	ABRDSHIP	258	1.8606	0.0150
VRSEDUC	ARI	230	486.7500	2.1295
VRSEDUC	CLER	230	236.8750	1.0364
VRSEDUC	AFQT	208	1049.2500	5.0680
VRSEDUC	TESTGRP	230	-58.6719	-0.2562
VRSEDUC	NECAWARD	258	0.0	0.0
VRSEDUC	CAPACITY	258	0.0	0.0
VRSEDUC	TYPEENL	258	72.2109	0.2810
VRSEDUC	CAREER	59	-3.9824	-0.0687
DEGREE	ABRDSHIP	258	13.8179	0.0938
DEGREE	ARI	230	267.0469	1.1661
DEGREE	CLER	230	194.7188	0.0503
DEGREE	AFQT	208	484.2344	2.3393
DEGREE	TESTGRP	230	-37.2190	-0.1626
DEGREE	NECAWARD	258	0.0	0.0
DEGREE	CAPACITY	258	0.0	0.0
DEGREE	TYPEENL	258	664.6406	-2.6056
DEGREE	CAREER	59	-7.2034	-0.1242
ABRDSHIP	GCT	230	183.5859	0.8017
ABRDSHIP	MECH	230	-12.2227	-0.0934
ABRDSHIP	SHOP	202	22.0703	0.1098
ABRDSHIP	ETST	204	55.4805	0.2635
ABRDSHIP	INSTDAYS	258	0.0	0.0
ABRDSHIP	PCS	258	0.4187	0.0016
ABRDSHIP	VRBONUS	99	-23.2727	-0.2375
ABRDSHIP	NMBRENL	258	-32.4651	-0.1263
ABRDSHIP	NMBRSCOL	258	-2.1277	-0.0083
GCT	MECH	230	5292.8125	23.1127
GCT	SHOP	202	4933.8750	24.9466
GCT	ETST	204	8612.3750	42.4255
GCT	INSTDAYS	230	0.0	0.0
GCT	PCS	230	-9.2070	-0.0402
GCT	VRBONUS	92	-465.5625	-5.1161
GCT	NMBRENL	230	-917.9668	-2.2619
GCT	NMBRSCOL	230	1314.6133	5.7407
ARI	CLER	230	5298.5000	23.1375
ARI	AFQT	194	17965.9375	92.9841
ARI	TESTGRP	230	-1010.6055	-4.4131
ARI	NECAWARD	230	0.0	0.0
ARI	CAPACITY	230	0.0	0.0
ARI	TYPEENL	230	-2882.5000	-9.9672
ARI	CAREER	54	-187.2031	-3.5321
MECH	CLER	230	806.1250	3.5202
MECH	AFQT	194	13769.4375	71.3442
MECH	TESTGRP	230	-489.1719	-2.1361
MECH	NECAWARD	230	0.0	0.0
MECH	CAPACITY	230	0.0	0.0
MECH	TYPEENL	230	-1322.8750	-5.7767
MECH	CAREER	54	-55.6445	-0.6725
CLER	SHOP	202	545.0000	2.7114
CLER	ETST	204	2998.1875	14.7694
CLER	INSTDAYS	230	0.0	0.0
CLER	PCS	230	19.1250	0.0839
CLER	VRBONUS	92	-42.7500	-0.4678
CLER	NMBRENL	230	-410.6836	-1.7934
CLER	NMBRSCOL	230	238.5195	1.0416
SHOP	ETST	193	3859.8750	19.8963
SHOP	INSTDAYS	202	0.0	0.0
SHOP	PCS	202	-24.8477	-0.1234
SHOP	VRBONUS	86	-974.0000	-11.4988
SHOP	NMBRENL	202	-11.8086	-0.0587
SHOP	NMBRSCOL	202	519.7148	1.5906
AFQT	TESTGRP	194	-1728.1328	-8.9541
AFQT	NECAWARD	208	0.0	0.0
AFQT	CAPACITY	208	0.0	0.0
AFQT	TYPEENL	208	-2004.0000	-9.6812
AFQT	CAREER	66	-104.6055	-6.7690
ETST	TESTGRP	204	-740.9297	-3.6499
ETST	NECAWARD	204	0.0	0.0
ETST	CAPACITY	204	0.0	0.0
ETST	TYPEENL	204	1584.0625	7.8033
ETST	CAREER	47	-96.9570	-2.1078
TESTGRP	INSTDAYS	230	0.0	0.0
TESTGRP	PCS	230	2.8262	0.0123
TESTGRP	VRBONUS	92	69.1328	0.7997
TESTGRP	NMBRENL	230	38.6958	0.1690
TESTGRP	NMBRSCOL	230	-171.2390	-0.5294
INSTDAYS	PCS	258	0.0	0.0
INSTDAYS	VRBONUS	99	0.0	0.0
INSTDAYS	NMBRENL	258	0.0	0.0
INSTDAYS	NMBRSCOL	258	0.0	0.0
NECAWARD	CAPACITY	258	0.0	0.0
NECAWARD	TYPEENL	258	0.0	0.0
NECAWARD	CAREER	59	0.0	0.0
PCS	CAPACITY	258	0.0	0.0
PCS	TYPEENL	258	-26.6250	-0.1036
PCS	CAREER	59	5.6951	0.0982
CAPACITY	VRBONUS	99	0.0	0.0
CAPACITY	NMBRENL	258	0.0	0.0
CAPACITY	NMBRSCOL	258	0.0	0.0
VRBONUS	NMBRENL	99	98.8203	1.0084
VRBONUS	NMBRSCOL	99	88.0938	0.8989
TYPEENL	CAREER	59	256.6445	4.4249
NMBRENL	CAREER	59	19.6611	0.3390
CAREER	NMBRSCOL	59	-17.5254	-0.1022

PRINEC	ARI	230	42.0449	0.1836
PRINEC	CLER	230	-86.2813	-0.3768
PRINEC	AFQT	208	196.0438	0.7577
PRINEC	TESTGRP	230	-3.2390	-0.0141
PRINEC	NECAWARD	258	0.0	0.0
PRINEC	CAPACITY	258	0.0	0.0
PRINEC	TYPEENL	258	200.2483	0.7792
PRINEC	CAREER	59	-4.9491	-0.0853
PNECTIME	VRSEDUC	148	2[illegible].0502	0.1419
PNECTIME	ABRDSHIP	148	-3.5270	-0.0240
PNECTIME	ARI	139	194.3633	1.4084
PNECTIME	CLER	139	-64.2517	-0.4656
PNECTIME	AFQT	129	735.7461	5.7480
PNECTIME	TESTGRP	139	-16.9209	-0.1226
PNECTIME	NECAWARD	148	0.0	0.0
PNECTIME	CAPACITY	148	0.0	0.0
PNECTIME	TYPEENL	148	757.9055	5.1558
PNECTIME	CAREER	40	1.5000	0.0385
VRSEDUC	DEGREE	258	52.6523	0.2049
VRSEDUC	GCT	230	696.1250	2.8652
VRSEDUC	MECH	230	52.5000	0.2293
VRSEDUC	SHOP	202	159.1875	0.7920
VRSEDUC	ETST	204	491.5625	2.4215
VRSEDUC	INSTDAYS	258	0.0	0.0
VRSEDUC	PCS	258	-1.57[illegible]	-0.0061
VRSEDUC	VRBONUS	99	30.45[illegible]	0.3106
VRSEDUC	NMBRENL	258	-18.4648	-0.0718
VRSEDUC	NMBRSCOL	258	95.3750	0.3711
DEGREE	GCT	230	442.4141	1.9319
DEGREE	MECH	230	66.8711	0.2920
DEGREE	SHOP	202	89.3398	0.4445
DEGREE	ETST	204	210.9336	1.0391
DEGREE	INSTDAYS	258	0.0	0.0
DEGREE	PCS	258	3.0466	0.0119
DEGREE	VRBONUS	99	-24.2695	-0.2476
DEGREE	NMBRENL	258	-56.1626	-0.2185
DEGREE	NMBRSCOL	258	30.4304	0.1184
ABRDSHIP	ARI	230	60.2109	0.2891
ABRDSHIP	CLER	230	36.2461	0.1983
ABRDSHIP	AFQT	208	78.4219	0.3788
ABRDSHIP	TESTGRP	230	-13.3477	-0.0983
ABRDSHIP	NECAWARD	258	0.0	0.0
ABRDSHIP	CAPACITY	258	0.0	0.0
ABRDSHIP	TYPEENL	258	-337.1211	-1.3118
ABRDSHIP	CAREER	99	-5.2942	-0.0906
GCT	ARI	230	12269.3125	53.5778
GCT	CLER	230	9114.7500	22.3351
GCT	AFQT	194	20198.2500	104.6541
GCT	TESTGRP	230	-1488.2813	-6.4990
GCT	NECAWARD	230	0.0	0.0
GCT	CAPACITY	230	0.0	0.0
GCT	TYPEENL	230	-6203.2500	-27.0884
GCT	CAREER	54	-155.4414	-2.9329
ARI	MECH	230	3377.1250	14.7473
ARI	SHOP	202	3077.2500	15.3097
ARI	ETST	204	6580.3750	32.4156
ARI	INSTDAYS	230	0.0	0.0
ARI	PCS	230	-34.8965	-0.1524
ARI	VRBONUS	92	-222.8750	-2.4492
ARI	NMBRENL	230	-241.0156	-1.0525
ARI	NMBRSCOL	230	1021.4453	4.4605
MECH	SHOP	202	6637.0625	33.0202
MECH	ETST	204	3880.3125	19.1148
MECH	INSTDAYS	230	0.0	0.0
MECH	PCS	230	-11.1094	-0.0485
MECH	VRBONUS	92	-1063.8125	-11.6902
MECH	NMBRENL	230	-28.1445	-0.1229
MECH	NMBRSCOL	230	312.2734	1.3636
CLER	AFQT	194	4870.0000	25.2332
CLER	TESTGRP	230	-628.5430	-1.8714
CLER	NECAWARD	230	0.0	0.0
CLER	CAPACITY	230	0.0	0.0
CLER	TYPEENL	230	-6948.1250	-28.5944
CLER	CAREER	54	-171.9063	-3.2435
SHOP	AFQT	193	10947.7500	57.0195
SHOP	TESTGRP	207	-451.6016	-2.2468
SHOP	NECAWARD	202	0.0	0.0
SHOP	CAPACITY	202	0.0	0.0
SHOP	TYPEENL	202	-349.3750	-1.7183
SHOP	CAREER	42	-32.1406	-0.7839
AFQT	ETST	189	16467.0000	87.5904
AFQT	INSTDAYS	208	0.0	0.0
AFQT	PCS	208	-86.9844	-0.4202
AFQT	VRBONUS	86	-1178.2500	-13.8618
AFQT	NMBRENL	208	-43.4844	-0.2101
AFQT	NMBRSCOL	208	2496.1602	12.0587
ETST	INSTDAYS	204	0.0	0.0
ETST	PCS	204	-31.4180	-0.1548
ETST	VRBONUS	81	-141.0000	-1.7629
ETST	NMBRENL	204	-7.9492	-0.0392
ETST	NMBRSCOL	204	851.3984	4.1961
TESTGRP	NECAWARD	230	0.0	0.0
TESTGRP	CAPACITY	230	0.0	0.0
TESTGRP	TYPEENL	230	474.6970	2.0719
TESTGRP	CAREER	54	12.7039	0.2397
INSTDAYS	NECAWARD	258	0.0	0.0
INSTDAYS	CAPACITY	258	0.0	0.0
INSTDAYS	TYPEENL	258	0.0	0.0
INSTDAYS	CAREER	59	0.0	0.0
NECAWARD	PCS	258	0.0	0.0
NECAWARD	VRBONUS	99	0.0	0.0
NECAWARD	NMBRENL	258	0.0	0.0
NECAWARD	NMBRSCOL	258	0.0	0.0
PCS	VRBONUS	99	-8.9063	-0.0909
PCS	NMBRENL	258	0.3955	0.0015
PCS	NMBRSCOL	258	-11.1162	-0.0433
CAPACITY	TYPEENL	258	0.0	0.0
CAPACITY	CAREER	59	0.0	0.0
VRBONUS	TYPEENL	99	2188.0000	22.3265
VRBONUS	CAREER	30	14.7668	0.5092
TYPEENL	NMBRENL	258	2105.6992	8.1934
TYPEENL	NMBRSCOL	258	660.4453	2.5698
NMBRENL	NMBRSCOL	258	36.9070	0.1436

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FLETRACEN NORVA - STUDENT STATISTICS - SELECTED COURSE 4552

FILE  STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE
PAIR                  PAIR                  PAIR                  PAIR                  PAIR                  PAIR
--------              --------              --------              --------              --------              --------

AGE        -0.1617    AGE         0.0939    AGE         0.1102    AGE         0.0603    AGE         0.2459    AGE        99.0000
WITH     N(  2261)    WITH     N(  2021)    WITH     N(  2081)    WITH     N(  2041)    WITH     N(  2261)    WITH     N(  2531)
CLER      SIG .015    SHOP      SIG .184    APQT      SIG .089    ETST      SIG .391    TESTGAP   SIG .001    INSTDAYS  SIG .***

AGE        99.0000    AGE         0.0210    AGE        99.0000    AGE         0.0726    AGE         0.6090    AGE         0.7917
WITH     N(  2531)    WITH     N(  2531)    WITH     N(  2531)    WITH     N(   991)    WITH     N(  2531)    WITH     N(  2531)
NECAWARD  SIG .***    PCS       SIG .719    CAPACITY  SIG .***    VRBONUS   SIG .475    TYPEENL   SIG .001    NMBRENL   SIG .001

AGE         0.1581    AGE         0.0175    SERVTIME    0.7275    SERVTIME    0.6905    SERVTIME   -0.0140    SERVTIME    0.0104
WITH     N(   581)    WITH     N(  2531)    WITH     N(  2561)    WITH     N(  2561)    WITH     N(  1191)    WITH     N(  2561)
CAREER    SIG .006    NMBRSCOL  SIG .352    RATE      SIG .001    RATETIME  SIG .001    PAYGTIME  SIG .079    PRINEC    SIG .068

SERVTIME    0.2511    SERVTIME   -0.0957    SERVTIME   -0.4106    SERVTIME   -0.4255    SERVTIME   -0.2963    SERVTIME   -0.1260
WITH     N(  1671)    WITH     N(  2561)    WITH     N(  2561)    WITH     N(  2561)    WITH     N(  2281)    WITH     N(  2281)
PNECTIME  SIG .002    VRSEDUC   SIG .127    DEGREE    SIG .001    ABRDSHIP  SIG .001    GCT       SIG .001    ARI       SIG .057

SERVTIME   -0.0507    SERVTIME    0.2208    SERVTIME   -0.0106    SERVTIME    0.0182    SERVTIME   -0.0581    SERVTIME    0.2623
WITH     N(  2281)    WITH     N(  2281)    WITH     N(  2021)    WITH     N(  2081)    WITH     N(  2031)    WITH     N(  2281)
MECH      SIG .446    CLER      SIG .001    SHOP      SIG .881    APQT      SIG .794    ETST      SIG .411    TESTGAP   SIG .001

SERVTIME   99.0000    SERVTIME   99.0000    SERVTIME    0.0030    SERVTIME   99.0000    SERVTIME    0.1321    SERVTIME    0.9467
WITH     N(  2561)    WITH     N(  2561)    WITH     N(  2561)    WITH     N(  2561)    WITH     N(   991)    WITH     N(  2561)
INSTDAYS  SIG .***    NECAWARD  SIG .***    PCS       SIG .962    CAPACITY  SIG .***    VRBONUS   SIG .192    TYPEENL   SIG .001

SERVTIME    0.8928    SERVTIME    0.3914    SERVTIME    0.1064    RATE        0.4375    RATE        0.0868    RATE        0.0722
WITH     N(  2561)    WITH     N(   581)    WITH     N(  2561)    WITH     N(  2571)    WITH     N(  1191)    WITH     N(  2581)
NMBRENL   SIG .001    CAREER    SIG .002    NMBRSCOL  SIG .089    RATETIME  SIG .001    PAYGTIME  SIG .348    PRINEC    SIG .248

RATE        0.5026    RATE        0.1030    RATE       -0.2478    RATE       -0.3128    RATE       -0.0396    RATE        0.1485
WITH     N(  1481)    WITH     N(  2581)    WITH     N(  2581)    WITH     N(  2581)    WITH     N(  2301)    WITH     N(  2301)
PNECTIME  SIG .001    VRSEDUC   SIG .096    DEGREE    SIG .001    ABRDSHIP  SIG .001    GCT       SIG .550    ARI       SIG .024

              A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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FLETRACEN NORVA - STUDENT STATISTICS - SELECTED COURSE 4552

FILE  STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE
PAIR                  PAIR                  PAIR                  PAIR                  PAIR                  PAIR
--------              --------              --------              --------              --------              --------

RATE        0.0917    RATE       -0.1920    RATE        0.1558    RATE        0.2429    RATE        0.2373    RATE       -0.0076
WITH     N(  2301)    WITH     N(  2301)    WITH     N(  2021)    WITH     N(  2081)    WITH     N(  2041)    WITH     N(  2301)
MECH      SIG .166    CLER      SIG .003    SHOP      SIG .027    APQT      SIG .001    ETST      SIG .001    TESTGAP   SIG .911

RATE       99.0000    RATE       99.0000    RATE        0.0012    RATE       99.0000    RATE        0.0700    RATE        0.6239
WITH     N(  2581)    WITH     N(  2581)    WITH     N(  2581)    WITH     N(  2581)    WITH     N(   991)    WITH     N(  2581)
INSTDAYS  SIG .***    NECAWARD  SIG .***    PCS       SIG .984    CAPACITY  SIG .***    VRBONUS   SIG .491    TYPEENL   SIG .001

RATE        0.6915    RATE        0.2558    RATE        0.3234    RATETIME    0.3448    RATETIME    0.2164    RATETIME    0.0947
WITH     N(  2581)    WITH     N(   581)    WITH     N(  2581)    WITH     N(  1191)    WITH     N(  2571)    WITH     N(  1671)
NMBRENL   SIG .001    CAREER    SIG .072    NMBRSCOL  SIG .001    PAYGTIME  SIG .001    PRINEC    SIG .001    PNECTIME  SIG .254

RATETIME   -0.0550    RATETIME   -0.2911    RATETIME   -0.4426    RATETIME   -0.1892    RATETIME   -0.0388    RATETIME    0.0372
WITH     N(  2571)    WITH     N(  2571)    WITH     N(  2571)    WITH     N(  2291)    WITH     N(  2291)    WITH     N(  2291)
VRSEDUC   SIG .380    DEGREE    SIG .001    ABRDSHIP  SIG .001    GCT       SIG .004    ARI       SIG .559    MECH      SIG .576

RATETIME   -0.0901    RATETIME   -0.0385    RATETIME    0.1497    RATETIME   -0.0717    RATETIME    0.1732    RATETIME   99.0000
WITH     N(  2291)    WITH     N(  2021)    WITH     N(  2081)    WITH     N(  2051)    WITH     N(  2291)    WITH     N(  2571)
CLER      SIG .490    SHOP      SIG .587    APQT      SIG .031    ETST      SIG .309    TESTGAP   SIG .009    INSTDAYS  SIG .***

RATETIME   99.0000    RATETIME    0.0474    RATETIME   99.0000    RATETIME   -0.0286    RATETIME    0.3041    RATETIME    0.8478
WITH     N(  2571)    WITH     N(  2571)    WITH     N(  2571)    WITH     N(   991)    WITH     N(  2571)    WITH     N(  2571)
NECAWARD  SIG .***    PCS       SIG .490    CAPACITY  SIG .***    VRBONUS   SIG .778    TYPEENL   SIG .001    NMBRENL   SIG .001

RATETIME    0.1978    RATETIME    0.0953    PAYGTIME    0.1132    PAYGTIME   -0.0126    PAYGTIME    0.2256    PAYGTIME    0.0274
WITH     N(   581)    WITH     N(  2571)    WITH     N(  1191)    WITH     N(   671)    WITH     N(  1191)    WITH     N(  1191)
CAREER    SIG .137    NMBRSCOL  SIG .128    PRINEC    SIG .220    PNECTIME  SIG .919    VRSEDUC   SIG .014    DEGREE    SIG .768

PAYGTIME   -0.3581    PAYGTIME    0.1566    PAYGTIME    0.0902    PAYGTIME    0.0575    PAYGTIME    0.0002    PAYGTIME    0.0177
WITH     N(  1191)    WITH     N(  1091)    WITH     N(  1091)    WITH     N(  1091)    WITH     N(  1091)    WITH     N(  1061)
ABRDSHIP  SIG .001    GCT       SIG .106    ARI       SIG .310    MECH      SIG .553    CLER      SIG .998    SHOP      SIG .858

              A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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FLETRACEN NORVA - STUDENT STATISTICS - SELECTED COURSE 4552

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE
PAIR                  PAIR                  PAIR                  PAIR                  PAIR                  PAIR
--------              --------              --------              --------              --------              --------


PAYGTIME   0.1498     PAYGTIME   0.1216     PAYGTIME  -0.1310     PAYGTIME  99.0000     PAYGTIME  99.0000     PAYGTIME   0.0374
WITH      N(  100)    WITH      N(  108)    WITH      N(  109)    WITH      N(  119)    WITH      N(  119)    WITH      N(  119)
AFQT      SIG .122    ETST      SIG .224    TESTGRP   SIG .179    INSTDAYS  SIG .***    NECAWARD  SIG .***    PCS       SIG .684

PAYGTIME  99.0000     PAYGTIME   0.0388     PAYGTIME   0.0528     PAYGTIME   0.0174     PAYGTIME  99.0000     PAYGTIME   0.1746
WITH      N(  119)    WITH      N(   35)    WITH      N(  119)    WITH      N(  119)    WITH      N(   29)    WITH      N(  119)
CAPACITY  SIG .***    VRBONUS   SIG .028    TYPEENL   SIG .568    UNBRENL   SIG .851    CAREER    SIG .***    UNBRSCOL  SIG .057

PRINEC    99.0000     PRINEC     0.0605     PRINEC    -0.0022     PRINEC     0.0860     PRINEC     0.0472     PRINEC     0.0565
WITH      N(  148)    WITH      N(  258)    WITH      N(  258)    WITH      N(  258)    WITH      N(  230)    WITH      N(  230)
PNECTIME  SIG .***    YRSEDUC   SIG .333    DEGREE    SIG .972    AEROSHIP  SIG .170    GCT       SIG .476    ARI       SIG .394

PRINEC     0.0567     PRINEC    -0.1018     PRINEC     0.0666     PRINEC     0.1009     PRINEC     0.0218     PRINEC    -0.0459
WITH      N(  230)    WITH      N(  230)    WITH      N(  202)    WITH      N(  208)    WITH      N(  209)    WITH      N(  230)
MECH      SIG .392    CLER      SIG .124    SHOP      SIG .347    AFQT      SIG .147    ETST      SIG .797    TESTGRP   SIG .492

PRINEC    99.0000     PRINEC    99.0000     PRINEC    -0.0682     PRINEC    99.0000     PRINEC    -0.0387     PRINEC     0.1455
WITH      N(  258)    WITH      N(  258)    WITH      N(  258)    WITH      N(  256)    WITH      N(   99)    WITH      N(  258)
INSTDAYS  SIG .***    NECAWARD  SIG .***    PCS       SIG .275    CAPACITY  SIG .***    VRBONUS   SIG .704    TYPEENL   SIG .019

PRINEC     0.0516     PRINEC    -0.2917     PRINEC     0.3160     PNECTIME   0.2006     PNECTIME   0.1716     PNECTIME  -0.0917
WITH      N(  258)    WITH      N(   59)    WITH      N(  258)    WITH      N(  148)    WITH      N(  148)    WITH      N(  148)
UNBRENL   SIG .409    CAREER    SIG .026    UNBRSCOL  SIG .001    YRSEDUC   SIG .015    DEGREE    SIG .037    AEROSHIP  SIG .268

PNECTIME   0.1988     PNECTIME   0.1916     PNECTIME   0.2033     PNECTIME  -0.0548     PNECTIME   0.2297     PNECTIME   0.3926
WITH      N(  139)    WITH      N(  139)    WITH      N(  139)    WITH      N(  139)    WITH      N(  130)    WITH      N(  129)
GCT       SIG .019    ARI       SIG .024    MECH      SIG .016    CLER      SIG .522    SHOP      SIG .009    AFQT      SIG .001

PNECTIME   0.3103     PNECTIME  -0.1890     PNECTIME  99.0000     PNECTIME  99.0000     PNECTIME   0.0902     PNECTIME  99.0000
WITH      N(  132)    WITH      N(  139)    WITH      N(  148)    WITH      N(  148)    WITH      N(  148)    WITH      N(  148)
ETST      SIG .001    TESTGRP   SIG .026    INSTDAYS  SIG .***    NECAWARD  SIG .***    PCS       SIG .275    CAPACITY  SIG .***

                     A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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FLETRACEN NORVA - STUDENT STATISTICS - SELECTED COURSE 4552

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - -

VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE
PAIR                  PAIR                  PAIR                  PAIR                  PAIR                  PAIR
--------              --------              --------              --------              --------              --------

PNECTIME   0.1798     PNECTIME   0.4548     PNECTIME   0.3199     PNECTIME   0.0517     PNECTIME   0.3181     YRSEDUC    0.4198
WITH      N(   69)    WITH      N(  148)    WITH      N(  148)    WITH      N(   40)    WITH      N(  148)    WITH      N(  258)
VRBONUS   SIG .139    TYPEENL   SIG .001    UNBRENL   SIG .001    CAREER    SIG .751    UNBRSCOL  SIG .001    DEGREE    SIG .001

YRSEDUC    0.0517     YRSEDUC    0.3609     YRSEDUC    0.3082     YRSEDUC    0.0361     YRSEDUC    0.1317     YRSEDUC    0.1571
WITH      N(  258)    WITH      N(  230)    WITH      N(  230)    WITH      N(  230)    WITH      N(  230)    WITH      N(  202)
AEROSHIP  SIG .408    GCT       SIG .001    ARI       SIG .001    MECH      SIG .586    CLER      SIG .046    SHOP      SIG .026

YRSEDUC    0.3519     YRSEDUC    0.4074     YRSEDUC   -0.1848     YRSEDUC   99.0000     YRSEDUC   99.0000     YRSEDUC   -0.0291
WITH      N(  208)    WITH      N(  204)    WITH      N(  230)    WITH      N(  258)    WITH      N(  258)    WITH      N(  258)
AFQT      SIG .001    ETST      SIG .001    TESTGRP   SIG .005    INSTDAYS  SIG .***    NECAWARD  SIG .***    PCS       SIG .642

YRSEDUC   99.0000     YRSEDUC    0.0547     YRSEDUC    0.0260     YRSEDUC   -0.0958     YRSEDUC   -0.0898     YRSEDUC    0.2836
WITH      N(  258)    WITH      N(   99)    WITH      N(  258)    WITH      N(  258)    WITH      N(   59)    WITH      N(  258)
CAPACITY  SIG .***    VRBONUS   SIG .591    TYPEENL   SIG .677    UNBRENL   SIG .125    CAREER    SIG .498    UNBRSCOL  SIG .001

DEGREE     0.2599     DEGREE     0.1821     DEGREE     0.2504     DEGREE     0.0681     DEGREE     0.1604     DEGREE     0.1273
WITH      N(  258)    WITH      N(  230)    WITH      N(  230)    WITH      N(  230)    WITH      N(  230)    WITH      N(  202)
AEROSHIP  SIG .001    GCT       SIG .005    ARI       SIG .001    MECH      SIG .306    CLER      SIG .015    SHOP      SIG .071

DEGREE    -0.2368     DEGREE     0.2459     DEGREE    -0.3636     DEGREE    99.0000     DEGREE    99.0000     DEGREE     0.0787
WITH      N(  208)    WITH      N(  204)    WITH      N(  230)    WITH      N(  258)    WITH      N(  258)    WITH      N(  258)
AFQT      SIG .001    ETST      SIG .001    TESTGRP   SIG .001    INSTDAYS  SIG .***    NECAWARD  SIG .***    PCS       SIG .208

DEGREE    99.0000     DEGREE    -0.0617     DEGREE    -0.3385     DEGREE    -0.4687     DEGREE    -0.2913     DEGREE     0.1268
WITH      N(  258)    WITH      N(   99)    WITH      N(  258)    WITH      N(  258)    WITH      N(   59)    WITH      N(  258)
CAPACITY  SIG .***    VRBONUS   SIG .544    TYPEENL   SIG .001    UNBRENL   SIG .001    CAREER    SIG .025    UNBRSCOL  SIG .042

AEROSHIP   0.2588     AEROSHIP   0.1019     AEROSHIP  -0.0206     AEROSHIP   0.0490     AEROSHIP   0.0576     AEROSHIP   0.0709
WITH      N(  230)    WITH      N(  230)    WITH      N(  230)    WITH      N(  230)    WITH      N( [illegible])    WITH      N(  208)
GCT       SIG .001    ARI       SIG .123    MECH      SIG .756    CLER      SIG .460    SHOP      SIG .[illegible]    AFQT      SIG .308

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PLETRACEN NORVA - STUDENT STATISTICS   SELECTED COURSE 4552

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - -   - - - -   P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - - -

VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE
PAIR                 PAIR                 PAIR                 PAIR                 PAIR                 PAIR
--------             --------             --------             --------             --------             --------


ABRDSHIP    0.1141   ABRDSHIP   -0.2150   ABRDSHIP  99.0000   ABRDSHIP  99.0000   ABRDSHIP    0.0182   ABRDSHIP  99.0000
WITH      N(  204)   WITH      N(  230)   WITH      N(  258)   WITH      N(  258)   WITH      N(  258)   WITH      N(  258)
ETST      SIG .104   TESTGRP   SIG .001   INSTDAYS  SIG .***   HECAWARD  SIG .***   PCS       SIG .771   CAPACITY  SIG .***

ABRDSHIP   -0.1007   ABRDSHIP   -0.2862   ABRDSHIP   -0.3969   ABRDSHIP   -0.2636   ABRDSHIP   -0.0149   GCT         0.7334
WITH      N(   99)   WITH      N(  258)   WITH      N(  258)   WITH      N(   59)   WITH      N(  258)   WITH      N(  230)
VRBONUS   SIG .321   TYPEENL   SIG .001   NMBRENL   SIG .001   CAREER    SIG .044   NMBRSCOL  SIG .812   ARI       SIG .001

GCT         0.3438   GCT         0.2685   GCT         0.4602   GCT         0.6920   GCT         0.7088   GCT        -0.9313
WITH      N(  230)   WITH      N(  230)   WITH      N(  202)   WITH      N(  196)   WITH      N(  204)   WITH      N(  230)
MECH      SIG .001   CLER      SIG .001   SHOP      SIG .001   AFQT      SIG .001   ETST      SIG .001   TESTGRP   SIG .001

GCT        99.0000   GCT        99.0000   GCT        -0.0177   GCT        99.0000   GCT        -0.0820   GCT        -0.2493
WITH      N(  230)   WITH      N(  230)   WITH      N(  230)   WITH      N(  230)   WITH      N(   92)   WITH      N(  230)
INSTDAYS  SIG .***   HECAWARD  SIG .***   PCS       SIG .790   CAPACITY  SIG .***   VRBONUS   SIG .437   TYPEENL   SIG .001

GCT        -0.2871   GCT        -0.3306   GCT         0.4120   ARI         0.2394   ARI         0.3037   ARI         0.3009
WITH      N(  230)   WITH      N(   54)   WITH      N(  230)   WITH      N(  230)   WITH      N(  230)   WITH      N(  202)
NMBRENL   SIG .001   CAREER    SIG .015   NMBRSCOL  SIG .001   MECH      SIG .001   CLER      SIG .001   SHOP      SIG .001

ARI         0.6422   ARI         0.5803   ARI        -0.6903   ARI        99.0000   ARI        99.0000   ARI        -0.0731
WITH      N(  196)   WITH      N(  204)   WITH      N(  230)   WITH      N(  230)   WITH      N(  230)   WITH      N(  230)
AFQT      SIG .001   ETST      SIG .001   TESTGRP   SIG .001   INSTDAYS  SIG .***   HECAWARD  SIG .***   PCS       SIG .270

ARI        99.0000   ARI        -0.0492   ARI        -0.1001   ARI        -0.1458   ARI        -0.4781   ARI         0.3495
WITH      N(  230)   WITH      N(   92)   WITH      N(  230)   WITH      N(  230)   WITH      N(   54)   WITH      N(  230)
CAPACITY  SIG .***   VRBONUS   SIG .669   TYPEENL   SIG .130   NMBRENL   SIG .027   CAREER    SIG .001   NMBRSCOL  SIG .001

MECH        0.0502   MECH        0.6969   MECH        0.5344   MECH        0.3804   MECH       -0.3631   MECH       99.0000
WITH      N(  230)   WITH      N(  202)   WITH      N(  196)   WITH      N(  204)   WITH      N(  230)   WITH      N(  230)
CLER      SIG .449   SHOP      SIG .001   AFQT      SIG .001   ETST      SIG .001   TESTGRP   SIG .001   INSTDAYS  SIG .***

          A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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PLETRACEN NORVA - STUDENT STATISTICS - SELECTED COURSE 4552

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - -   - - - -   P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S - - - - - - - - - - - - - - -

VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE             VARIABLE
PAIR                 PAIR                 PAIR                 PAIR                 PAIR                 PAIR
--------             --------             --------             --------             --------             --------


MECH       99.0000   MECH       -0.0253   MECH       99.0000   MECH       -0.2052   MECH       -0.0631   MECH       -0.0185
WITH      N(  230)   WITH      N(  230)   WITH      N(  230)   WITH      N(   92)   WITH      N(  230)   WITH      N(  230)
HECAWARD  SIG .***   PCS       SIG .703   CAPACITY  SIG .***   VRBONUS   SIG .050   TYPEENL   SIG .341   NMBRENL   SIG .780

MECH       -0.1009   MECH        0.1161   CLER        0.0476   CLER        0.1536   CLER        0.2186   CLER       -0.2571
WITH      N(   54)   WITH      N(  230)   WITH      N(  202)   WITH      N(  196)   WITH      N(  204)   WITH      N(  230)
CAREER    SIG .468   NMBRSCOL  SIG .079   SHOP      SIG .501   AFQT      SIG .033   ETST      SIG .002   TESTGRP   SIG .001

CLER       99.0000   CLER       99.0000   CLER        0.0352   CLER       99.0000   CLER       -0.0091   CLER       -0.2524
WITH      N(  230)   WITH      N(  230)   WITH      N(  230)   WITH      N(  230)   WITH      N(   92)   WITH      N(  230)
INSTDAYS  SIG .***   HECAWARD  SIG .***   PCS       SIG .596   CAPACITY  SIG .***   VRBONUS   SIG .932   TYPEENL   SIG .001

CLER       -0.2183   CLER       -0.4391   CLER        0.0717   SHOP        0.4990   SHOP        0.4667   SHOP       -0.4766
WITH      N(  230)   WITH      N(   54)   WITH      N(  230)   WITH      N(  193)   WITH      N(  195)   WITH      N(  202)
NMBRENL   SIG .001   CAREER    SIG .001   NMBRSCOL  SIG .279   AFQT      SIG .001   ETST      SIG .001   TESTGRP   SIG .001

SHOP       99.0000   SHOP       99.0000   SHOP       -0.0760   SHOP       99.0000   SHOP       -0.2479   SHOP       -0.0225
WITH      N(  202)   WITH      N(  202)   WITH      N(  202)   WITH      N(  202)   WITH      N(   86)   WITH      N(  202)
INSTDAYS  SIG .***   HECAWARD  SIG .***   PCS       SIG .287   CAPACITY  SIG .***   VRBONUS   SIG .021   TYPEENL   SIG .751

SHOP       -0.0178   SHOP       -0.1329   SHOP        0.1606   AFQT        0.6985   AFQT       -0.6807   AFQT       99.0000
WITH      N(  202)   WITH      N(   47)   WITH      N(  202)   WITH      N(  189)   WITH      N(  196)   WITH      N(  208)
NMBRENL   SIG .802   CAREER    SIG .401   NMBRSCOL  SIG .022   ETST      SIG .001   TESTGRP   SIG .001   INSTDAYS  SIG .***

AFQT       99.0000   AFQT       -0.0876   AFQT       99.0000   AFQT       -0.1055   AFQT       -0.0428   AFQT       -0.0229
WITH      N(  208)   WITH      N(  208)   WITH      N(  208)   WITH      N(   86)   WITH      N(  208)   WITH      N(  208)
HECAWARD  SIG .***   PCS       SIG .208   CAPACITY  SIG .***   VRBONUS   SIG .334   TYPEENL   SIG .539   NMBRENL   SIG .743

AFQT       -0.4759   AFQT        0.4187   ETST       -0.7069   ETST       99.0000   ETST       99.0000   ETST       -0.0822
WITH      N(   46)   WITH      N(  208)   WITH      N(  204)   WITH      N(  204)   WITH      N(  204)   WITH      N(  204)
CAREER    SIG .001   NMBRSCOL  SIG .001   TESTGRP   SIG .001   INSTDAYS  SIG .***   HECAWARD  SIG .***   PCS       SIG .242

          A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
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FLETRACEN NORVA - STUDENT STATISTICS - SELECTED COURSE 4552

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - -  - - - - - - - - -P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S- - - - - - - - - - - - - -

VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE
PAIR                  PAIR                  PAIR                  PAIR                  PAIR                  PAIR
--------              --------              --------              --------              --------              --------


ETST       99.0000    ETST       -0.0376    ETST        0.0888    ETST       -0.0078    ETST       -0.3184    ETST        0.3629
WITH      N( 204)     WITH      N(  81)     WITH      N( 204)     WITH      N( 204)     WITH      N(  47)     WITH      N( 204)
CAPACITY SIG .***     VRBONUS   SIG .739    TYPEENL   SIG .206    NMBRENL   SIG .912    CAREER    SIG .029    NMBRSCOL SIG .001

TESTGRP    99.0000    TESTGRP    99.0000    TESTGRP     0.0619    TESTGRP    99.0000    TESTGRP     0.1390    TESTGRP     0.2179
WITH      N( 230)     WITH      N( 230)     WITH      N( 230)     WITH      N( 230)     WITH      N(  92)     WITH      N( 230)
INSTDAYS SIG .***     NECAWARD SIG .***     PCS       SIG .350    CAPACITY SIG .***     VRBONUS   SIG .186    TYPEENL   SIG .001

TESTGRP     0.2451    TESTGRP     0.3340    TESTGRP    -0.4342    INSTDAYS   99.0000    INSTDAYS   99.0000    INSTDAYS   99.0000
WITH      N( 230)     WITH      N(  54)     WITH      N( 230)     WITH      N( 258)     WITH      N( 258)     WITH      N( 258)
NMBRENL   SIG .001    CAREER    SIG .014    NMBRSCOL SIG .001     NECAWARD SIG .***     PCS       SIG .***    CAPACITY SIG .***

INSTDAYS   99.0000    INSTDAYS   99.0000    INSTDAYS   99.0000    INSTDAYS   99.0000    INSTDAYS   99.0000    NECAWARD   99.0000
WITH      N(  99)     WITH      N( 258)     WITH      N( 258)     WITH      N(  59)     WITH      N( 258)     WITH      N( 258)
VRBONUS   SIG .***    TYPEENL   SIG .***    NMBRENL   SIG .***    CAREER    SIG .***    NMBRSCOL SIG .***     PCS       SIG .***

NECAWARD   99.0000    NECAWARD   99.0000    NECAWARD   99.0000    NECAWARD   99.0000    NECAWARD   99.0000    NECAWARD   99.0000
WITH      N( 258)     WITH      N(  99)     WITH      N( 258)     WITH      N( 258)     WITH      N(  59)     WITH      N( 258)
CAPACITY SIG .***     VRBONUS   SIG .***    TYPEENL   SIG .***    NMBRENL   SIG .***    CAREER    SIG .***    NMBRSCOL SIG .***

PCS        99.0000    PCS        -0.0568    PCS        -0.0311    PCS         0.0067    PCS         0.4364    PCS        -0.1070
WITH      N( 258)     WITH      N(  99)     WITH      N( 258)     WITH      N( 258)     WITH      N(  59)     WITH      N( 258)
CAPACITY SIG .***     VRBONUS   SIG .577    TYPEENL   SIG .619    NMBRENL   SIG .915    CAREER    SIG .001    NMBRSCOL SIG .086

CAPACITY   99.0000    CAPACITY   99.0000    CAPACITY   99.0000    CAPACITY   99.0000    CAPACITY   99.0000    VRBONUS     0.9704
WITH      N(  99)     WITH      N( 258)     WITH      N( 258)     WITH      N(  59)     WITH      N( 258)     WITH      N(  99)
VRBONUS   SIG .***    TYPEENL   SIG .***    NMBRENL   SIG .***    CAREER    SIG .***    NMBRSCOL SIG .***     TYPEENL   SIG .001

VRBONUS     0.5212    VRBONUS     0.1448    VRBONUS     0.0795    TYPEENL     0.6927    TYPEENL     0.5193    TYPEENL     0.1244
WITH      N(  99)     WITH      N(  30)     WITH      N(  99)     WITH      N( 258)     WITH      N(  59)     WITH      N( 258)
NMBRENL   SIG .001    CAREER    SIG .445    NMBRSCOL SIG .434     NMBRENL   SIG .001    CAREER    SIG .001    NMBRSCOL SIG .046

                 A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
```

```
FLETRACEN NORVA - STUDENT STATISTICS - SELECTED COURSE 4552

FILE   STUDCHAR (CREATION DATE = 09/12/74)   ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

- - - - - - - - - - - - - - -P E A R S O N   C O R R E L A T I O N   C O E F F I C I E N T S- - - - - - - - - - - - - -

VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE              VARIABLE
PAIR                  PAIR                  PAIR                  PAIR                  PAIR                  PAIR
--------              --------              --------              --------              --------              --------


NMBRENL     0.4805    NMBRENL     0.1001    CAREER     -0.2050
WITH      N(  59)     WITH      N( 258)     WITH      N(  59)
CAREER    SIG .001    NMBRSCOL SIG .109     NMBRSCOL SIG .119

                 A VALUE OF 99.0000 IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.
```

```
FLETRACEN NORVA - STUDENT STATISTICS - SELECTED COURSE 4552

                    REGRESSION     VARIABLES=ACTYCODE,GCT TO CLER,NMBRSCOL/
                                   REGRESSION=ACTYCODE WITH NMBRSCOL(5),ARI(5),GCT(3)/
                                   REGRESSION=ACTYCODE WITH GCT TO CLER(5)
                    STATISTICS     ALL
```

```
FLETRACEN NORVA   STUDENT STATISTICS - SELECTED COURSE 4552

FILE    STUDCHAR (CREATION DATE = 09/12/74)    ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

VARIABLE           MEAN     STANDARD DEV     CASES

ACTYCODE         0.1124           0.3168       169
GCT             59.8639           8.2505       169
ARI             57.5207           7.8407       169
MECH            56.9621           7.4616       169
CLER            51.4379           9.1384       169
NMBRSCOL         2.4024           1.6305       169
```

```
CORRELATION COEFFICIENTS

A VALUE OF 99.00000 IS PRINTED
IF A COEFFICIENT CANNOT BE COMPUTED.


              ACTYCODE   GCT        ARI        MECH       CLER       NMBRSCOL

ACTYCODE       1.00000  -0.29241  -0.30884  -0.07473  -0.13018  -0.19179
GCT           -0.29241   1.00000   0.74697   0.29750   0.30404   0.40321
ARI           -0.30884   0.74697   1.00000   0.19184   0.37570   0.33178
MECH          -0.07473   0.29750   0.19184   1.00000   0.02736   0.08893
CLER          -0.13018   0.30404   0.37570   0.02736   1.00000   0.05722
NMBRSCOL       0.19179   0.40321   0.33178   0.08893   0.05722   1.00000
```

```
FLETRACEN NORVA - STUDENT STATISTICS - SELECTED COURSE 4992

FILE    STUDCHAR (CREATION DATE = 09/12/74)    ANALYSIS OF SELECTED COURSE STUDENTS AT FTC NORVA

* * * * * * * * * * * * * * * * * * * * * * * *  M U L T I P L E   R E G R E S S I O N  * * * * * * * * * * * * * * * * * * * * * * * *

DEPENDENT VARIABLE..     ACTYCODE   STUDENT FINAL ACTIVITY STATUS

VARIABLE(S) ENTERED ON STEP NUMBER  1..     ARI

MULTIPLE R           0.30884                 ANALYSIS OF VARIANCE     DF       SUM OF SQUARES        MEAN SQUARE            F
R SQUARE             0.09539                 REGRESSION                1.            1.60856            1.60856         17.60892
STANDARD ERROR       0.30224                 RESIDUAL                167.           15.25534            0.09135

------------------ VARIABLES IN THE EQUATION ------------------        ------------- VARIABLES NOT IN THE EQUATION --------------

VARIABLE                B           BETA      STD ERROR B       F        VARIABLE      BETA IN      PARTIAL   TOLERANCE          F

ARI               -0.01248     -0.30884         0.00297      17.609      GCT          -0.13962     -0.09760     0.44204       1.596
(CONSTANT)         0.83027                                               NMBRSCOL     -0.10037     -0.09955     0.88992       1.662

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

VARIABLE(S) ENTERED ON STEP NUMBER  2..     NMBRSCOL    NO. FORMAL SERVICE SCHOOLS ATTENDED

MULTIPLE R           0.32303                 ANALYSIS OF VARIANCE     DF       SUM OF SQUARES        MEAN SQUARE            F
R SQUARE             0.10435                 REGRESSION                2.            1.75975            0.87988          9.67015
STANDARD ERROR       0.30164                 RESIDUAL                166.           15.10415            0.09099

------------------ VARIABLES IN THE EQUATION ------------------        ------------- VARIABLES NOT IN THE EQUATION --------------

VARIABLE                B           BETA      STD ERROR B       F        VARIABLE      BETA IN      PARTIAL   TOLERANCE          F

ARI               -0.01113     -0.27594         0.00315      12.923      GCT          -0.11116     -0.07566     0.41491       0.950
NMBRSCOL          -0.01990     -0.10037         0.01513       1.662
(CONSTANT)         0.79973
* * * * * * * * * * * * * * * * * * * * * * * *  M U L T I P L E   R E G R E S S I O N  * * * * * * * * * * * * * * * * * * * * * * * *

DEPENDENT VARIABLE..     ACTYCODE   STUDENT FINAL ACTIVITY STATUS

VARIABLE(S) ENTERED ON STEP NUMBER  3..     GCT

MULTIPLE R           0.33087                 ANALYSIS OF VARIANCE     DF       SUM OF SQUARES        MEAN SQUARE            F
R SQUARE             0.10948                 REGRESSION                3.            1.84622            0.61541          6.76148
STANDARD ERROR       0.30169                 RESIDUAL                165.           15.01769            0.09102

------------------ VARIABLES IN THE EQUATION ------------------        ------------- VARIABLES NOT IN THE EQUATION --------------

VARIABLE                B           BETA      STD ERROR B       F        VARIABLE      BETA IN      PARTIAL   TOLERANCE          F

ARI               -0.00804     -0.19895         0.00447       3.234
NMBRSCOL          -0.01573     -0.08096         0.01562       1.014
GCT               -0.00427     -0.11116         0.00438       0.950
(CONSTANT)         0.86818

MAXIMUM STEP REACHED

* * * * * * * * * * * * * * * * * * * * * * * *  M U L T I P L E   R E G R E S S I O N  * * * * * * * * * * * * * * * * * * * * * * * *

DEPENDENT VARIABLE..     ACTYCODE   STUDENT FINAL ACTIVITY STATUS

                                                       SUMMARY TABLE

VARIABLE                                            MULTIPLE R  R SQUARE  RSQ CHANGE   SIMPLE R              B              BETA

ARI                                                   0.30884   0.09539    0.09539    -0.30884         -0.00804          -0.19895
NMBRSCOL   NO. FORMAL SERVICE SCHOOLS ATTENDED        0.32303   0.10435    0.00897    -0.19179         -0.01573          -0.08096
GCT                                                   0.33087   0.10948    0.00513    -0.29241         -0.00427          -0.11116
(CONSTANT)                                                                                             0.86818
```

Summary. The multivariate model just described will be developed for each course in order to produce a predictive capability at a course level. The only dependent variable addressed was the Rate of Academic Failures. This will be expanded to address Non-academic Disenrollments and Setbacks for the training course period; also it will be expanded to No-Shows and possibly Substitute Quotas for the pre-training enrollment window. The key to the production of usable statistical data is the availability of an accurate data base. Considerable effort was required to purify the student and course data used in the preceding analyses, however, it is recognized that data integrity problems still exist. One of the major classes of information missing from the analyses was historical student evaluation data. It is believed that this would have produced considerable insight into the disenrollment and setback area. While these data were not provided due to the concern for privacy, procedures should be able to be worked out in the future to depersonalize the data before leaving BUPERS so that this would no longer be an issue.

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APPLICATION PROGRAM LISTINGS

The following pages contain the program listings for these TPF model application support programs:

- CARDIN
- UNLOAD1
- FAIL1
- FAIL2
- FAIL3

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```
FORTRAN IV G LEVEL  21              MAIN             DATE = 74270        21/23/42              PAGE 0001
                  C
                  C SHORT UTILITY TO ALLOW CARD INPUT OF NAMES TO THE TPF DATA2 FILE
                  C THIS PROGRAM LOADS 200 DUMMY NAMES IF NO INPUT CARDS ARE PRESENT
                  C
 0001                   INTEGER*4 IN
 0002                   DIMENSION IN (20)
                  C
                  C READ NAMES CARDS - BRANCH TO 100 AT END FILE
                  C WRITE TO FILE 10 (DATA2) CARDS
                  C
                  C
 0003                   ICARD = 0
                  C
 0004                 5 READ (5, 10, END = 100)  (IN (I), I = 1, 20)
 0005                10 FORMAT (20A4)
 0006                   WRITE (10, 10) (IN (I), I = 1, 20)
                  C
 0007                   ICARD = ICARD + 1
 0008                   GO TO 5
                  C
                  C END INPUT FILE - TEST IF ANY CARDS
 0009               100 IF (ICARD .GT. 0) GO TO 2000
                  C
                  C HERE IF NO CARDS - WRITE DUMMIES
                  C
 0010                   DO 1000 I = 1, 200
 0011                   WRITE (10, 1) I
 0012                 1 FORMAT (4X,'SCHOOLCATALOG NO', I3, ' POSITION IN CARD INPUT DATA B
                       1ASE FOR COURSE NAME')
 0013              1000 CONTINUE
                  C
 0014              2000 CONTINUE
 0015                   REWIND 10
 0016                   STOP
 0017                   END
```

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```
09/27/74        INPUT LISTING                         AUTOFLOW CHART SET -

FORTRAN MODULE      (LIST)

 CARD NO         ****                          CONTENTS                          ****

                 C
                 C SHORT UTILITY TO ALLOW CARD INPUT OF NAMES TO THE TPF DATA2 FILE
                 C THIS PROGRAM LOADS 200 DUMMY NAMES IF NO INPUT CARDS ARE PRESENT
                 C
                       INTEGER*4 IN
                       DIMENSION IN (20)
                 C
                 C READ NAMES CARDS - BRANCH TO 100 AT END FILE
                 C WRITE TO FILE 10 (DATA2) CARDS
                 C
                 C
                       ICARD = 0
                 C
                     5 READ (5, 10, END = 100)  (IN (I), I = 1, 20)
                    10 FORMAT (20A4)
                       WRITE (10, 10) (IN (I), I = 1, 20)
                 C
                       ICARD = ICARD + 1
                       GO TO 5
                 C
                 C END INPUT FILE - TEST IF ANY CARDS
                   100 IF (ICARD .GT. 0) GO TO 2000
                 C
                 C HERE IF NO CARDS - WRITE DUMMIES
                 C
                       DO 1000 I = 1, 200
                       WRITE (10, 1) I
                     1 FORMAT (4X,'SCHOOLCATALOG NO', I3, ' POSITION IN CARD INPUT DATA B
                      1ASE FOR COURSE NAME')
                  1000 CONTINUE
                 C
                  2000 CONTINUE
                       REWIND 10
                       STOP
                       END
```

```
     UNLOAD1:       /* K.B. FIRST UNLOAD1 - MON 16/SEPT/74 */                                    PAGE     2

STMT LEVEL NEST
  1               UNLOAD1:      /* K.B. FIRST UNLOAD1 - MON 16/SEPT/74 */
                                /* FORMAT UNLOADED DATA BASE TO DATA1 & DATA2 */
                                /* CHANGE DEMAND & HDEMAND, ADD JNO TO CARD 2  */
                                /* K.B. SECOND UPDATE - CHANGE CARD FORMATS 19/SEPT/74*/

                       PROC OPTIONS (MAIN) ;

  2     1         DECLARE
                       UNLOAD       FILE RECORD SEQUENTIAL INPUT
                                    ENVIRONMENT ( VBS (3520,160) ),
                       INVAR        CHAR (160) VARYING,
                       ( CARD, CARD2 )      CHAR (80),
                       ( PM, P1 )   POINTER ;
  3     1         DECLARE
                       1 MASTER     BASED (PM),
                         2 SEQUENCE FIXED BIN (31),
                         2 SEGNAME  CHAR (8),
                         2 AUX      CHAR (4),
                         2 SORTCTL  CHAR (82),
                         2 DATAFLD  CHAR (48) ;
  4     1         DECLARE
                       1 COURSE     BASED (P1),
                         2 PREFIX   CHAR (10),
                         2 CRSNO    CHAR (4),
                         2 CRSNAME  CHAR (60),
                         2 DEPT     CHAR (6),
                         2 LENGTH   FIXED DEC (3,1),

                         2 QUALTIME FIXED DEC (3,1),
                         2 BUPCAP   FIXED DEC (3),
                         2 INSTCAP  FIXED DEC (3),
                         2 CRSTYPE  FIXED DEC (1),
                         2 MINCON   FIXED DEC (3),

                         2 CHNGDATE FIXED DEC (5),
                         2 OFFSET   FIXED DEC (5),
                         2 NBUPCAP  FIXED DEC (3),
                         2 NINSTCAP FIXED DEC (3),
                         2 NMINCON  FIXED DEC (3),

                         2 NLENGTH  FIXED DEC (3,1),
                         2 NECAWARD CHAR (4),
                         2 WAIT     FIXED DEC (3),
                         2 JNO      CHAR (4),
                         2 TPF1 (2) FIXED DEC (5),
                         2 TPF2 (3) FIXED DEC (5,1) ;

                  /* YE L'LL ULDE INITILIZATION SECTION FOLLOWS */

  5     1              PM = ADDR (INVAR) ;
  6     1              P1 = ADDR (SORTCTL) ;
```

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```
      UNLOAD1:      /* K.B. FIRST UNLOAD1 - MON 16/SEPT/74 */                    PAGE    3

 STMT LEVEL NEST

   7    1                 OPEN FILE (UNLOAD),
                               FILE (SYSUT3) RECORD OUTPUT,
                               FILE (SYSUT2) RECORD OUTPUT ;

   8    1                 ON ENDFILE (UNLOAD)
   9    1                      GO TO WRAPUP ;

  10    1                 NR, NS = 0 ;
  11    1                 CARD, CARD2 = ' ' ;

                               /* MAINLINE FOLLOWS */

  12    1         R1:     READ FILE (UNLOAD) INTO (INVAR) ;
  13    1                 NR = NR + 1 ;

  14    1                      IF ( SEGNAME ¬= '1COURSE ' )
  15    1                           THEN GO TO R1 ;

  16    1         PROCESS_UPPASTORM:
                          NS = NS + 1 ;

  17    1                      IF (NECAWARD = '   0')
  18    1                        THEN NECAWARD = ' ';

  19    1                 PUT STRING (CARD) EDIT
                               ( CRSNO, DEPT, MINCON, LENGTH,
                                 INSTCAP, BUPCAP, CHNGDATE, OFFSET,
                                 NMINCON, NLENGTH, NINSTCAP, NBUPCAP,
                                 WAIT, TPF1(2), TPF1(1), TPF2(2),
                                 TPF2(3), CRSTYPE, TPF2(1), JNO,
                                 NECAWARD )

                               ( A(4), A(6), P'999', P'99V9',
                                 P'999', P'999', P'999', F(3),
                                 P'999', P'99V9', P'999', P'999',
                                 P'99', 2 P'99999', X (4),
                                 2 P'999V9', P'9',
                                 P'999V9', X (3), 2 A (4) ) ;

  20    1                 WRITE FILE (SYSUT2) FROM (CARD) ;

  21    1                 PUT STRING (CARD2) EDIT
                               ( CRSNO, DEPT, PREFIX, CRSNAME )
                               ( A (4), A (6), A (10), A (40) ) ;

  22    1                 WRITE FILE (SYSUT3) FROM (CARD2) ;

  23    1                 PUT EDIT ( CARD2, CARD )
                               ( SKIP(2), X(20), A(80),
                                 SKIP(1), X(20), A(80) ) ;

  24    1                      GO TO R1 ;
```

```
        UNLOAD1:      /* K.R. FIRST UNLOAD1 - MON 16/SEPT/74 */                                    PAGE    4

STMT LEVEL NEST

 25     1          WRAPUP:
                          PUT DATA ( NN, NS ) SKIP(2) ;

 26     1                       END UNLOAD1 ;
```

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```
        FAIL1:    /* MERGE OF COURSE AND STUDENT AVERAGE DATA */                                    PAGE     2

STMT LEVEL NEST
  1                 FAIL1:    /* MERGE OF COURSE AND STUDENT AVERAGE DATA */
                           PROC OPTIONS (MAIN) ;

  2     1           DECLARE
                           DREC            CHAR (80),
                                 DSCOL  CHAR (1)  DEF     DREC  POS (1),
                                 DCRSE  CHAR (4)  DEF     DREC POS (2),
                                 DP6    CHAR (5)  DEF     DREC POS (1),

                           SREC            CHAR (80),
                                 SSCOL  CHAR (1)  DEF     SREC  POS (1),
                                 SCRSE  CHAR (4)  DEF     SREC POS (2),
                                 SP6    CHAR (5)  DEF     SREC POS (1),

                           1 CARD,
                             2 ID,
                               3 CSCOL  CHAR (1),
                               3 CCRSE  CHAR (4),
                             2 ARRAY (50) FLOAT DEC (16),

                           LOAD1 (19)   FLOAT DEC (16) BASED (PL1),
                           LOAD2 (15)   FLOAT DEC (16) BASED (PL2),
                           LOAD3 (12)   FLOAT DEC (16) BASED (PL3),

                           ( DEOF, SEOF ) BIT (1) ;


  3     1           INITILIZATION:
                           OPEN FILE (CORSE) RECORD INPUT,
                                FILE (STUD) RECORD INPUT,
                                FILE (COMBO) RECORD OUTPUT ;

  4     1                  DEOF, SEOF = '0'B ;
  5     1                  NO, NS = 1 ;
  6     1                  NOSTUD, NN = 0 ;

  7     1                  PL1 = ADDR ( ARRAY(2) ) ;
  8     1                  PL2 = ADDR ( ARRAY(21) ) ;
  9     1                  PL3 = ADDR ( ARRAY(36) ) ;

 10     1                  ON ENDFILE (CORSE)
 11     1                        GO TO CORSE_ROUNDUP ;

 12     1                  ON ENDFILE (STUD)
 13     1                        GO TO STUD_ROUNDUP1 ;

 14     1                  READ FILE (CORSE) INTO (DREC) ;
 15     1                  READ FILE (STUD) INTO (SREC) ;

 16     1                  ON ENDFILE (STUD)
 17     1                        GO TO STUD_ROUNDUP2 ;

                    /* HERE, GET NEW DATA INTO THE OUTPUT ARRAY FROM THE COURSE CARD */

 18     1           STEP1:
```

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```
         FAIL1:     /* MERGE OF COURSE AND STUDENT AVERAGE DATA */                                          PAGE      3

STMT LEVEL NEST

                              CSCOL = DSCOL ;
  19      1                   CCASE = DCASE ;

  20      1                   GET STRING (UREC)
                                     EDIT (LOAD1)
                                     ( X(9), 4 F(2),
                                       F(3), F(1), F(2), 2 F(1), 2 F(2),
                                       2 F(1), F(2), F(1), X(1), F(3), 3 F(2) ) ;

  21      1                   GET STRING (DREC)          /* THIS IS PRECALCULATED PCT FAIL */
                                     EDIT ( ARRAY(49) )
                                     ( X(48), F(2) ) ;

  22      1                   GET STRING (DREC)
                                     EDIT (LOAD2)
                                     ( X(50), 6 F(2),
                                       7 F(2), 2 F(2) ) ;

  23      1                   LOAD3 = 0.0 ;          /* ZEROES ALL STUDENT DATA */

  24      1                   IF ( SEOF )
  25      1                          THEN GO TO STEP3 ;

  26      1          TEST1:   IF ( DF6 = SF6 )
  27      1                          THEN GO TO STEP2 ; .

  28      1                   IF ( DF6 < SF6 )
  29      1                          THEN GO TO STEP3 ;

  30      1                   IF ( SEOF )
  31      1                          THEN GO TO STEP3 ;

  32      1                   READ FILE (STUD) INTO (SREC) ;
  33      1                   NS = NS + 1 ;

  34      1                          GO TO TEST1 ;

                 /* HERE, OUTTA STUD RECORDS - MERELY BUMP THE SKIP COUNTER */

  35      1      STEP3:
                              NOSTUD = NOSTUD + 1 ;
  36      1                          GO TO PROCESS ;

                 /* HERE, MATCH FOUND BETWEEN COURSE AND STUDENT RECORDS */

  37      1      STEP2:
                              GET STRING ( SREC )
                                     EDIT ( LOAD3 )
                                     ( X(5), F(5,1), 3 F(4,1), F(3,1),
                                       2 F(4,1), 3 F(3,1), 2 F(4,1) ) ;

                 /* NOW, OUTPUT THE MERGED ARRAY */

  38      1      PROCESS:
                              WRITE FILE (COMBO) FROM (CREC) ;
```

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```
      FAIL1:     /* MERGE OF CORSE AND STUDENT AVERAGE DATA */                                   PAGE      4

STMT LEVEL NEST

 39     1                  NR = NR + 1 ;

 40     1                  READ FILE (CORSE) INTO (DREC) ;
 41     1                  ND = ND + 1 ;
 42     1                        GO TO STEP1 ;

                 /* END-OF-FILE PROCESSING SECTION FOLLOWS */

 43     1        STUD_ROUNDUP1:/* EOF ON STUDENT DATASET - NO CARDS AT ALL */
                         SEOF = '1'B ;
 44     1                      GO TO STEP1 ;

 45     1        STUD_ROUNDUP2:        /* HERE EOF ON STUDENT DATASET */
                         SEOF = '1'B ;
 46     1                      GO TO STEP3 ;

 47     1        CORSE_ROUNDUP:
                         DEOF = '1'B ;
 48     1                PUT DATA ( ND, NS, DEOF, SEOF, NUSTUD, NR ) SKIP(3) ;

 49     1                      END FAIL1 ;
```

```
       FAIL2:    /* COEFFICIENT ARRAY PROCESSOR - TUE/24/SEP/74 */                              PAGE      2

STMT LEVEL NEST
  1                  FAIL2:    /* COEFFICIENT ARRAY PROCESSOR - TUE/24/SEP/74 */
                               PROC OPTIONS (MAIN) ;

  2     1            DECLARE
                               1 CREC,
                                 2 CID,
                                   3 CSCOL CHAR (1),
                                   3 CCRSE CHAR (4),
                                 2 ARRAY (50) FLOAT DEC (16),

                               1 CARD,
                                 2 CTYPE,
                                   3 VSCOL CHAR (1),
                                   3 VCRSE CHAR (4),
                                 2 FILL1     CHAR (4),
                                 2 CPARMS    CHAR (60),
                                 2 FILL2     CHAR (11),

                               PARMS (4)     CHAR (15) BASED (PP),

                               YEPS          CHAR (15),
                                     VSS     CHAR (2) DEF YEPS POS (1),

                               ROUTE.        LABEL ;

  3     1             INITILIZATION:
                               PP = ADDR (CPARMS) ;

  4     1                      VSCOL = ' ' ;
  5     1                      VCRSE = ' ' ;
  6     1                      FILL1 = ' ' ;
  7     1                      CPARMS = ' ' ;
  8     1                      FILL2 = ' ' ;

  9     1                      OPEN FILE (SYSUT1) RECORD INPUT,
                                    FILE (SYSUT2) RECORD OUTPUT ;

 10     1                      ON ENDFILE (SYSUT1)
 11     1                           GO TO ENDITALL ;

 12     1                      NR = 0 ;
 13     1                      NCF, NC = 0 ;
 14     1                      READ FILE (SYSUT1) INTO (CARD) ;
 15     1                      NC = 1 ;

 16     1             STEP1:   /* SETUP NEW SCHOOL HERE */
                               CSCOL = VSCOL ;

 17     1                      PUT EDIT ( '** SCHOOL CODE = |', CSCOL, '|', (20)'_' )
                                     ( SKIP (2), X(10), A, A(1), A,
                                       SKIP(0), X(10), A(20) ) ;

 18     1             STEP2:   /* SETUP NEW COURSE, SAME SCHOOL */
                               CCRSE = VCRSE ;
```

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```
  FAIL2:    /* COEFFICIENT ARRAY PROCESSOR - TUE/24/SEP/74 */                          PAGE     3

STMT LEVEL NEST

 19     1                    ARRAY = 0.0 ;
 20     1                    NCF = 0 ;

 21     1           LOOP1:         DO J = 1 TO 4 ;

 22     1     1                    YEPS = PARMS (J) ;

 23     1     1                    IF ( VSS = '  ' )
 24     1     1                         THEN GO TO ELOOP1 ;

 25     1     1                    GET STRING ( YEPS )
                                        EDIT ( K, ARRAY(K) )
                                        ( F(2), F(13,7) ) ;

 26     1     1                    NCF = NCF + 1 ;
 27     1     1     ELOOP1:        END LOOP1 ;

 28     1                    READ FILE (SYSUT1) INTO (CARD) ;
 29     1                    NC = NC + 1 ;

 30     1                    IF ( VSCOL ¬= CSCOL )
 31     1                         THEN GO TO SCHOOL_BREAK ;

 32     1                    IF ( VCRSE = CCRSE )
 33     1                         THEN GO TO LOOP1 ;

 34     1           COURSE_BREAK:
                             ROUTE = STEP2 ;
 35     1                         GO TO WRITEIT ;

 36     1           SCHOOL_BREAK:
                             ROUTE = STEP1 ;
 37     1                         GO TO WRITEIT ;

 38     1           WRITEIT:
                             PUT EDIT ( 'COURSE = ', CCRSE,
                                       ';  TOTAL COEFFICIENTS = ', NCF )
                                  ( SKIP(1), X(20), A, A(4), A, F(2) ) ;

 39     1                    WRITE FILE (SYSUT2) FROM (CREC) ;
 40     1                    NR = NR + 1 ;

 41     1                         GO TO ROUTE ;

 42     1           ENDITALL:
                             ROUTE = LASTSTEP ;
 43     1                         GO TO WRITEIT ;

 44     1           LASTSTEP:
                             PUT DATA ( NC, NR ) SKIP (3) ;

 45     1                         END FAIL2 ;
```

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      FAIL3:    /* FAILURE RATE CALCULATIONS - TUE/24/SEP/74 */                              PAGE     2

STMT LEVEL NEST
  1                 FAIL3:    /* FAILURE RATE CALCULATIONS - TUE/24/SEP/74 */
                              PROC OPTIONS (MAIN) ;

  2     1           DECLARE
                              VIDS          CHAR (5) BASED (PVS),
                              CIDS          CHAR (5) BASED (PCS),

                              1 VREC,
                                2 VID,
                                  3 VSCOL   CHAR (1),
                                  3 VCRSE   CHAR (4),
                                2 VARRAY (50) FLOAT DEC (16),

                              1 CREC,
                                2 CID,
                                  3 CSCOL   CHAR (1),
                                  3 CCRSE   CHAR (4),
                                2 CARRAY (50) FLOAT DEC (16),

                              FREC          CHAR (80),
                                    FSCOL   CHAR (1) DEF FREC POS (1),
                                    FCOURSE CHAR (4) DEF FREC POS (2),
                                    FRATE   PICTURE '---9V.999999' DEF FREC POS (6) ;

  3     1           DECLARE
                              SCOLTTL       CHAR (38),
                              OLDSCODE      CHAR (1),

                              SNAMES (11)  CHAR (38) INIT (
                                    'AIR CONDITIONING / REFRIGERATION',
                                    'ELECTRICAL',
                                    'DAMAGE CONTROL / FIRE FIGHTING',
                                    '3M',
                                    'INSTRUCTOR TRAINING / ADMINISTRATION',
                                    'SUPPLY',
                                    'ELECTRONIC TECHNICIAN',
                                    'COMMUNICATIONS',
                                    'TELETYPE MAINTENANCE',
                                    'NAVIGATION',
                                    'ANTI-SUB WARFARE / ELECTRONICS WARFARE' ),

                              SCODES (11)  CHAR (1) INIT (
                                    'B', 'C', 'D', 'E', 'F', 'G', 'H', 'J', 'K',
                                    'M', 'N' ) ;

  4     1           DECLARE
                              ( VEOF, BEOF ) BIT (1),
                              ( ROUTE, WAY ) LABEL,
                              ( NWAY(3), JWAY(3), TYPE(3) ) LABEL,
                              PATH          LABEL,
                              GOA (3)       LABEL ;

  5     1           DECLARE        /* COMPUTATIONAL DECLARATIONS */
                              CVGEN (50) FLOAT DEC (16) BASED (PV),
                              CCGEN (50) FLOAT DEC (16) BASED (PC),
                              CPGEN (50) FLOAT DEC (16) BASED (PP),
      FAIL3:     /* FAILURE RATE CALCULATIONS - TUE/24/SEP/74 */                                  PAGE     3

STMT LEVEL NEST

                          ( C1V(50), C2V(50), C3V(50) ) FLOAT DEC (16),
                          ( C1C(50), C2C(50), C3C(50) ) FLOAT DEC (16),
                          ( C1P(50), C2P(50), C3P(50) ) FLOAT DEC (16),

                          ( PSUM(3), DCOPR(3), CFAIL(3) ) FLOAT DEC (16),

                          MSG (3)        FIXED BIN,
                          ( MSGL1(3), MSGL2(3) ) CHAR (29),
                          COURSE (3)    CHAR (4),
                          ( G1, G2 )    FLOAT DEC (16) ;

  6    1             DECLARE         /* STRING DECLARATIONS FOR TITLES, DIVIDERS, ETC. */
                          LA             CHAR (130),
                          LB             CHAR (95),
                          LC             CHAR (128),
                                LC4      CHAR (1) DEF LC POS (4),
                          LD             CHAR (130),
                          LE             CHAR (95),
                          LF (48)        CHAR (1) STATIC
                                INIT ( (48)(1)' ' ) ;

  7    1             DECLARE /* LEFT-HAND MARGIN TITLES */
                          TTL  (47)     CHAR (27) STATIC INIT (
                                ' 1                        NUMBER:',
                                ' 2                   DAYS LENGTH:',
                                ' 3                     CAPACITY:',
                                ' 4                 AV OFF INPUT:',
                                ' 5                 AV ENL INPUT:',
                                ' 6             CONVENE PER YEAR:',
                                ' 7                QUOTA CONTROL:',
                                ' 8             COURSE AGE (YRS):',
                                ' 9            MODEL MNGR (CCMM):',
                                '10                  COURSE TYPE:',
                                '11                     PRIORITY:',
                                '12                        % LAB:',
                                '13               CHANGEABILITY:',
                                '14                   GRADE TYPE:',
                                '15 C                 PASS LEVEL:',
                                '16 O                  NEC AWARD:',
                                '17 R                 % UTILIZED:',
                                '18 S                 % NO SHOWS:',
                                '19 L            BACKLOG (WEEKS):',
                                '20               % SUB QUOTAS:',
                                '21 D          % ACAD SETBACKS:',
                                '22 T         % NONAC SETBACKS:',
                                '23 A        % NONAC DISENROLE:',
                                '24                AV GCT SCORE:',
                                '25                AV ARI SCORE:',
                                '26               AV MECH SCORE:',
                                '27               AV CLER SCORE:',
                                '28               AV SHOP SCORE:',
                                '29               AV AFUT SCORE:',
                                '30               AV ETST SCORE:',
                                '31             AV STUDENT AGE:',
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     FAIL3:    /* FAILURE RATE CALCULATIONS - TUE/24/SEP/74 */                                PAGE    4

STMT LEVEL NEST

                          '32          AV STUDENT RATE:',
                          '33     INSTR ROTATION RATE:',
                          '34     AV INSTRS PER CLASS:',
                          '35      INSTR AV PAY GRADE:',
                          '36 S              AV GRADE:',
                          '37 T     AV YRS IN SERVICE:',
                          '38 U        AV YRS IN RATE:',
                          '39 D    AV YRS IN PAYGRADE:',
                          '40 E    PRI NEC? (1 = YES):',
                          '41 T     AV YRS IN PRI NEC:',
                          '42      AV YRS FORMAL EDUC:',
                          '43 D           DEGREE CODE:',
                          '44 A  DUTY TYPE (1 = SHIP):',
                          '45 T         PCS DUTY CODE:',
                          '46      AV YRS CURRENT ENL:',
                          '47      AV # PRIOR SCHOOLS:' ) ;
   8     1           DECLARE
                     FSELECT (47)          LABEL INIT (
                          FMT1,  FMT2,  FMT3,  FMT3,  FMT3,  FMT3,
                          FMT4,  FMT5,  FMT4,  FMT4,  FMT6,  FMT2,
                          FMT7, FMT4, FMT2, FMT4, FMT2, FMT2,
                          FMT2, FMT2, FMT2, FMT2, FMT2, FMT2,
                          FMT2, FMT2, FMT2, FMT2, FMT2, FMT2,
                          FMT5,  FMT5,  FMT2,  FMT5,  FMT5,  FMT2,
                          FMT5, FMT5, FMT5, FMT7, FMT5, FMT5,
                          FMT7, FMT7, FMT7,  FMT5, FMT5 ) ;

   9     1           FMT0:   FORMAT ( SKIP(0), A(95) ) ;

  10     1           FMT1:   FORMAT ( SKIP(1), A(95) ) ;

  11     1           FMT2:   /* XXX.X */
                             FORMAT ( SKIP(1), A(27),
                                   3 ( X(2), F(5,1), X(5),
                                       F(8,3), X(3), F(8,3), X(3) ) ) ;

  12     1           FMT3:   /*  XXX    */
                             FORMAT ( SKIP(1), A(27),
                                   3 ( X(2), F(3), X(7),
                                       F(8,3), X(3), F(8,3), X(3) ) ) ;

  13     1           FMT4:   /*    X    */
                             FORMAT ( SKIP(1), A(27),
                                   3 ( X(4), F(1), X(7),
                                       F(8,3), X(3), F(8,3), X(3) ) ) ;

  14     1           FMT5:   /*   XXX.X  */
                             FORMAT ( SKIP(1), A(27),
                                   3 ( X(3), F(4,1), X(5),
                                       F(8,3), X(3), F(8,3), X(3) ) ) ;

  15     1           FMT6:   /*   XX    */
                             FORMAT ( SKIP(1), A(27),
```

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        FAIL :     /* FAILURE RATE CALCULATIONS - TUE/24/SEP/74 */                                        PAGE     5

   STMT LEVEL NEST

                                      X ( X(3), F(2), X(7),
                                          F(3,3), X(3), F(3,3), X(3) ) ) ;

    16     1           FMT7:   /*   X.X.   */
                               FORMAT ( SKIP(1), A(27),
                                      3 ( X(4), F(3,1), A(5),
                                          F(8,3), X(3), F(8,3), X(3) ) ) ;

    17     1           INITIALIZATION_FOR_STRINGS:
                               LA = (24)'*'  ||
                                      (3)'* AVERAGE  X  COEFF  =  TERM *****' ;

    18     1                   LB = '  |  |'  ||  (55)' '  ||  '*'  ||  (33)' '  ||  '*'  ;

    19     1                   LC = '  |  |'  ||  (32)' '  ||  (2)'|           '  ||  ' '  ||
                                  (2)'*         |          |            ' ;

    20     1                   LD = (130)'*' ;

    21     1                   LE = (60)' '  ||  '*'  ||  (33)' '  ||  '*' ;

    22     1                   LF (17) = 'U' ;
    23     1                   LF (22) = 'A' ;
    24     1                   LF (41) = 'N';
    25     1                   LF (46) = 'A' ;

    26     1           INITILZATION:
                               OPEN FILE (VAR)      RECORD INPUT,
                                    FILE (COEFF)    RECORD INPUT,
                                    FILE (FAIL)     RECORD OUTPUT,
                                    FILE (RFAIL) STREAM PRINT,
                                    FILE (SYSPRINT) PAGESIZE (80) LINESIZE (132) ;
    27     1                   ON ENDFILE (VAR)
    28     1                        GO TO EOF_VAR ;

    29     1                   ON ENDFILE (COEFF)
    30     1                        GO TO EOF_COEFF ;
    31     1                        WAY = CFIRST ;

    32     1                   CEOF, VEOF = '0'B ;
    33     1                   NV, NC, NVS, NCS = 0 ;
    34     1                   NF = 0 ;
    35     1                   FREC = ' ' ;

    36     1                   PVS = ADDR ( VSCOL ) ;
    37     1                   PCS = ADDR ( CSCOL ) ;

    38     1                   READ FILE (VAR) INTO (VREC) ;
    39     1                        NV = 1 ;
    40     1                   READ FILE (COEFF) INTO (CREC) ;
    41     1                        NC = 1 ;
```

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      FAIL3:    /* FAILURE RATE CALCULATIONS - TUE/24/SEP/74 */                    PAGE    6

 STMT LEVEL NEST

  42     1                      DAY = CSECOND ;

                  /* START NEW SCHOOL HERE */

  43     1        STEP1:
                          NC = 1 ;
  44     1                NSG = 0 ;
  45     1                OLDSCODE = VSCOL ;
  46     1                FSCOL = VSCOL ;

  47     1        LOOP1:        DO J = 1 TO 14 ;
  48     1    1                 IF ( VSCOL ¬= SCODES(J) )
  49     1    1                       THEN GO TO ELOOP1 ;
  50     1    1                             SCOLTTL = SNAMES (J) ;
  51     1    1                                  GO TO STEP2AA ;

  52     1    1   ELOOP1:       END LOOP1 ;

  53     1                            SCOLTTL = 'UNIDENTIFIED CODE' ;

  54     1        STEP2AA:
                          PUT FILE (RFAIL) EDIT
                                ( 'SCHOOL = |', VSCOL, '|    ', SCOLTTL )
                                ( SKIP(3), X(10), A, A(1), A, A(38) ) ;

  55     1        STEP2:
                          GO TO GOA (NC) ;

  56     1        GOA(1): PV = ADDR ( C1V(1) );
  57     1                PC = ADDR ( C1C(1) ) ;
  58     1                PP = ADDR ( C1P(1) ) ;
  59     1                      GO TO STEP2A ;

  60     1        GOA(2): PV = ADDR ( C2V(1) ) ;
  61     1                PC = ADDR ( C2C(1) ) ;
  62     1                PP = ADDR ( C2P(1) ) ;
  63     1                      GO TO STEP2A ;

  64     1        GOA(3): PV = ADDR ( C3V(1) ) ;
  65     1                PC = ADDR ( C3C(1) ) ;
  66     1                PP = ADDR ( C3P(1) ) ;
  67     1                      GO TO STEP2A ;

                  /* HERE, LOAD THE VARIABLE ARRAY */

  68     1        STEP2A:
                          CVGEN = VARRAY ;
  69     1                COURSE (NC) = VCRSE ;

                  /* NOW, PICKUP THE RELATED COEFFICIENTS ARRAY, IF ANY */

  70     1        STEP3:
                          CCGEN = 0.0 ;
```

```
        FAILRS:    /* FAILURE RATE CALCULATIONS - TUE/2-/SEP/74 */                          PAGE      7

STMT LEVEL NEST

  71     1                    IF ( CEOF )
  72     1                          THEN GO TO ASSUMED_NO_COEFFICIENTS ;

  73     1                    IF ( VIDS = CIDS )
  74     1                          THEN GO TO GET_COEFFICIENTS ;

  75     1             RECYCLE_COEFF:
                              IF ( VIDS < CIDS )
  76     1                          THEN GO TO ASSUMED_NO_COEFFICIENTS ;

  77     1                    READ FILE (COEFF) INTO (CREC) ;
  78     1                          NC = NC + 1 ;

  79     1                    IF ( VIDS = CIDS )
  80     1                          THEN GO TO GET_COEFFICIENTS ;

  81     1                                NCS = NCS + 1 ;
  82     1                                GO TO RECYCLE_COEFF ;

  83     1             ASSUMED_NO_COEFFICIENTS:
                              NVS = NVS + 1 ;
  84     1                    CCGE = 0.0 ;
  85     1                    MSG(NC) = 1 ;
  86     1                          GO TO RECYCLE_COURSE ;

  87     1             GET_COEFFICIENTS:
                              CCGE = CARRAY ;

  88     1             RECYCLE_COURSE:
                              READ FILE (VAR) INTO (VREC) ;
  89     1                          NV = NV + 1 ;

  90     1                    IF ( VSCOL ¬= OLDSCODE ) THEN
  91     1             SCHOOL_BREAK: DO ;
  92     1     1                    ROUTE = STEP1 ;
  93     1     1                          GO TO PAGEOUT ;
  94     1     1                    END SCHOOL_BREAK ;

  95     1                    IF ( NC > 2 ) THEN
  96     1             PAGE_BREAK:   DO ;
  97     1     1                    ROUTE = PAGE_RESET ;
  98     1     1                          GO TO PAGEOUT ;
  99     1     1                    END PAGE_BREAK ;

 100     1             NEXT_COURSE:  /* HERE, SAME SCHOOL, PAGE, NEW COURSE */
                              NC = NC + 1 ;
 101     1                          GO TO STEP2 ;

 102     1             PAGE_RESET:   /* NEW PAGE, SAME SCHOOL, NEW COURSE */
                              NC = 1 ;
 103     1                    MSG = 0 ;
 104     1                          GO TO STEP2 ;


                       /* CALCULATIONS FOR ONE COMPLETE PAGE DONE HERE */
```

```
FAILR3   /* FAILURE RATE CALCULATIONS - TUE/28/SEP/76 */                          PAGE    8

STMT LEVEL NEST

105    1          PAGE3::
                                DO J = 1 TO NC ;

106    1    1                   IF ( MSG(J) = 0 )
107    1    1                        THEN GO TO NORMAL_CALCULATIONS ;

108    1    1     SUBSTITUTE_CALCULATIONS:
                                GO TO NWAY (J) ;

109    1    1     NWAY(1):      C1P = 0.0 ;
110    1    1                   G1 = C1V (49) ;

111    1    1     NWAYA:        CFAIL (J) = G1 ;
112    1    1                   DCOPB (J) = G1 ;
113    1    1                   PSUM (J) = 0.0 ;

114    1    1                   MSGL1(J) = 'FOR THIS COURSE, COEFFICIENTS' ;
115    1    1                   MSGL2(J) = '      ARE ASSUMED = ZERO' ;

116    1    1                          GO TO WINDUP ;

117    1    1     NWAY(2):      C2P = 0.0 ;
118    1    1                   G1 = C2V (49) ;
119    1    1                          GO TO NWAYA ;

120    1    1     NWAY(3):      C3P = 0.0 ;
121    1    1                   G1 = C3V (49) ;
122    1    1                          GO TO NWAYA ;

123    1    1     NORMAL_CALCULATIONS:
                                GO TO JWAY (J) ;

124    1    1     JWAY(1):      C1P = C1V * C1C ;
125    1    1                   C1P (48) = 0.0 ;
126    1    1                   C1P (49) = 0.0 ;
127    1    1                   G1 = C1C (48) ;
128    1    1                   G2 = SUM (C1P) ;
129    1    1                          GO TO JWAYX ;

130    1    1     JWAY(2):      C2P = C2V * C2C ;
131    1    1                   C2P (48) = 0.0 ;
132    1    1                   C2P (49) = 0.0 ;
133    1    1                   G1 = C2C (48) ;
134    1    1                   G2 = SUM (C2P) ;
135    1    1                          GO TO JWAYX ;

136    1    1     JWAY(3):      C3P = C3V * C3C ;
137    1    1                   C3P (48) = 0.0 ;
138    1    1                   C3P (49) = 0.0 ;
139    1    1                   G1 = C3C (48) ;
140    1    1                   G2 = SUM (C3P) ;

141    1    1     JWAYX:        PSUM(J) = G2 ;
142    1    1                   DCOPB(J) = G1 ;
```

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       FAIL3:     /* FAIL RATE CALCULATIONS - TUE/24/SEP/74 */                                     PAGE        9

STMT LEVEL NEST

143      1    1                       CFAIL(J) = G1 + G2 ;

144      1    1                       MSGL1(J) = ' ' ;
145      1    1                       MSGL2(J) = ' ' ;

146      1    1    WLOOP:             FCOURSE = COURSE (J) ;
147      1    1                       FRATE = CFAIL (J) ;

148      1    1                       WRITE FILE (FAIL) FROM (FREC) ;
149      1    1                               NF = NF + 1 ;

150      1    1                       PUT FILE (WFAIL) EDIT
                                              ( 'COURSE: ', FCOURSE, '   FAILURE RATE: ',
                                                      FRATE )
                                              ( SKIP(1), X(20), A, A(4), A, A(11) ) ;

151      1    1                       END PAGOUT ;

                   /* PRINTER PAGE OUTPUT STARTED HERE ...
                           FIRST = DOWN THRU LINE 07 */

152      1         L123:   PUT EDIT
                                  ( 'H                   SCHOOL NAME: ', SCULTTL,
                                    'E                   SCHOOL CODE: ', OLUSCODE,
                                    'F' )
                                  ( PAGE, A, A(38),
                                    SKIP(1), A, A(1),
                                    SKIP(1), A ) ;

153      1         L4A5:   LC4 = ' ' ;
154      1                 PUT EDIT
                                  ( L4, L8 )
                                  ( SKIP(1), A(130),
                                    SKIP(1), A(95) ) ;

155      1         L6:     PUT EDIT
                                  ( TTL(1), ( COURSE(K) DO K = 1 TO NC ) )
                                  ( SKIP(1), A(27), 3 ( X(2), A(4), X(28) ) ) ;

156      1         L6A7:   PUT EDIT
                                  ( L6, L8 )
                                  ( SKIP(0), A(95),
                                    SKIP(1), A(95) ) ;

                   /* HERE, STARTS LOOP FOR OUTPUT FOR VARIABLES NOS. 2 THRU 35, INCL */

157      1                 PATH = PHAZE1 ;
158      1                 J1 = 2 ;
159      1                 J2 = 35 ;

160      1         LOOP2A:        K = 0 ;
161      1         LOOP2:         DO J = J1 TO J2 ;

162      1    1                   K = K + 1 ;
```

```
        FAIL3:    /* FAILURE RATE CALCULATIONS - TUE/24/SEP/74 */                    PAGE    10

STMT L-VFL NEST

163     1    1                    IF ( K > 5 ) THEN

164     1    1    INNERLOOP:              DO ;
165     1    2                            K = 1 ;
166     1    2                            LC4 = LF (J) ;
167     1    2                            PUT EDIT ( LC ) ( SKIP(1), A(128) ) ;
168     1    2                            END INNERLOOP ;

169     1    1                    GO TO TYPE ( NC ) ;

170     1    1    TYPE(1):        PUT EDIT
                                          ( TTL(J), C1V(J), C1C(J), C1P(J) )
                                          ( R(FSELECT(J)) ) ;
171     1    1                                   GO TO ELOOP2 ;

172     1    1    TYPE(2):        PUT EDIT
                                          ( TTL(J), C1V(J), C1C(J), C1P(J),
                                                    C2V(J), C2C(J), C2P(J) )
                                          ( R(FSELECT(J)) ) ;
173     1    1                                   GO TO ELOOP2 ;

174     1    1    TYPE(3):        PUT EDIT
                                          ( TTL(J), C1V(J), C1C(J), C1P(J),
                                                    C2V(J), C2C(J), C2P(J),
                                                    C3V(J), C3C(J), C3P(J) )
                                          ( R(FSELECT(J)) ) ;

175     1    1    ELOOP2:         LC4 = ' ' ;
176     1    1                    PUT EDIT ( LC ) ( SKIP(0), A(128) ) ;

177     1    1                    END LOOP2 ;

178     1                                 GO TU PATH ;

                  /* HERE, LINES FOR VARIABLES NOS. 36 THRU 47, INCL. */

179     1         PHAZE1: PATH = PHAZE2 ;
180     1                 J1 = 36 ;
181     1                 J2 = 47 ;

182     1         L3638:  LC4 = ' ' ;
183     1                 PUT EDIT
                                  ( LL, LO, LC )
                                  ( SKIP(1), A(128),
                                    SKIP(1), A(130),
                                    SKIP(1), A(128) ) ;

184     1                                 GO TU LOOP2A ;

                  /* ALL SUMMARY LINES OUTPUT HERE */

185     1         PHAZE2:
                  L6567:  LC4 = ' ' ;
186     1                 PUT EDIT
                                  ( LC, LD, LE )
```

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        FAILST    /* FAILURE RATE CALCULATIONS - TUE/24/SEP/74 */                         PAGE     11

STMT LEVEL NEST

                                 ( SKIP(1), A(120),
                                   SKIP(1), A(130),
                                   SKIP(1), A(95) ) ;

 187     1          L6:    PUT EDIT
                                 ( '           COLUMN PRODUCT SUM:',
                                       ( PSUM(K) DO K = 1 TO NC ) )
                                 ( SKIP(1), A, X(20), F(11,3), X(23), F(11,3),
                                   X(23), F(11,3) ) ;

 188     1          L6F78: PUT EDIT
                                 ( LF, LC, LD, LF )
                                 ( SKIP(0), A(95),
                                   SKIP(1), A(95),
                                   SKIP(1), A(130),
                                   SKIP(1), A(95) ) ;

 189     1          L72:   PUT EDIT
                                 ( '                 COEFFICIENT OF', LE )
                                 ( SKIP(1), A,
                                   SKIP(0), A(95) ) ;

 190     1          L73:   PUT EDIT
                                 ( '                        ADJUSTMENT:',
                                       ( DLOPB(K) DO K = 1 TO NC ) )
                                 ( SKIP(1), A, X(23), F(8,3), X(26), F(8,3),
                                       X(26), F(8,3) ) ;

 191     1          L73A:  PUT EDIT
                                 ( LG, LG, LG, LG )
                                 ( SKIP(0), A(95),
                                   SKIP(1), A(95),
                                   SKIP(1), A(130),
                                   SKIP(1), A(95) ) ;

 192     1          L77:   PUT EDIT
                                 ( '      COMPUTED FAILURE RATE:',
                                       ( CFAIL(K) DO K = 1 TO NC ) )
                                 ( SKIP(1), A, X(23), F(8,3), X(26), F(8,3),
                                       X(26), F(8,3) ) ;

 193     1          L77B:  PUT EDIT
                                 ( LG, LG )
                                 ( SKIP(0), A(95),
                                   SKIP(1), A(95) ) ;

 194     1          L79:   PUT EDIT
                                 ( ( MSG1(K) DO K = 1 TO NC ) )
                                 ( SKIP(1), X(29), A(28), X(5), A(29),
                                       X(5), A(29) ) ;

 195     1                 PUT EDIT
                                 ( LE ) ( SKIP(0), A(95) ) ;

 196     1          L80:   PUT EDIT
```

```
STMT LEVEL NEST

                                 ( ( MSGL2(K) DO K = 1 TO NC ) )
                                 ( SKIP(1), X(29), A(29), X(5), A(29),
                                       X(5), A(29) ) ;

 197    1                PUT EDIT
                                 ( LE ) ( SKIP(0), A(95) ) ;

                 /* NOW, BACK TO APPROPRIATE SPOT IN MAINLINE */

 198    1                                  GO TO ROUTE ;


                 /* END-OF-FILE PROCESSING SECTION FOLLOWS */

 199    1        EOF_VAR:
                         VEOF = '1'B ;
 200    1                ROUTE = VERYLAST ;
 201    1                        GO TO PAGEOUT ;


 202    1        EOF_COEFF:
                         CEOF = '1'B ;
 203    1                        GO TO WAY ;

 204    1        CFIRST: /* HERE, NO COEFFICIENTS AT ALL */
                      NC = 0 ;
 205    1                        GO TO STEP1 ;

 206    1        CSECOND:        /* HERE, NORMAL COEFF ENDING */
                         GO TO ASSUMED_NO_COEFFICIENTS ;


 207    1        VERYLAST:
                         PUT PAGE ;
 208    1                PUT DATA
                                 ( NV, NC, NF, NVS, NCS, CEOF, VEOF )
                                 SKIP (5) ;

 209    1                        END FAIL3 ;
```

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TPF MODEL PROGRAM LISTING

The following pages contain the program listing for the TPF model.

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FORTRAN IV G LEVEL  21              MAIN              DATE = 74255        22/44/14              PAGE 0001

            C ********** TPF MODEL - AS OF SUNDAY, SEPTEMBER 22, 1974 **********
            C
 0001             IMPLICIT INTEGER*2 (A-Z,$)
 0002             REAL*4 BKLGPL
 0003             REAL*4 NOSHPL, BPOOL, NADIS, FAIL
 0004             REAL*4 ACTCTR, TFAIL, TNADIS
 0005             REAL*4 LEN, LENA, LENB
 0006             REAL*4 TEM, TEM1, TEM2, TEM3, TEM4, TEM5
 0007             REAL*4 NOSHOW
 0008             REAL*8 SCHOOL
 0009             INTEGER*4 WHERE
 0010             INTEGER*4 COP, JNO
 0011             INTEGER*4 MEC
 0012             INTEGER*4 TSDAYS
 0013             INTEGER*4 ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
 0014             INTEGER*4 TCAP, TUTIL, TPASS
            C
            C COMMON DATA FOR CLASS DATA MATRIX
            C
 0015             COMMON COP (200), SCHOOL (200), CRSRUN (200), CONVA (200)
 0016             COMMON LENA (200), CAPA (200), BCAPA (200), OFFSET (200)
 0017             COMMON CHOWK (200), CONVB (200), LENB (200), CAPB (200)
 0018             COMMON BCAPB (200), MEC (200), BAKLOG (200), NOSHOW (200)
 0019             COMMON BKLGPL (200), NOSHPL (200), DEMAND (200), BDMAND (200)
 0020             COMMON BPOOL (200), FAIL (200), NADIS (200), JNO (200)
            C
            C QUARTERLY AND ANNUAL COURSE TOTALS ACCUMULATION
            C
 0021             COMMON TCAP (5, 200), TUTIL (5, 200), TSETBK (5, 200)
 0022             COMMON TSDAYS (5, 200), TFAIL (5, 200), TNOSHO (5, 200)
 0023             COMMON TNADIS (5, 200), TBKLOG (5, 200), TCONV (5, 200)
            C
            C COMMON FOR COMMUNICATION BETWEEN SUBROUTINES
            C
 0024             COMMON DUMMY
 0025             COMMON CONV, LEN, CAP, BCAP, LAST, COURSE
 0026             COMMON TEM, TEM1, TEM2, TEM3, TEM4, TEM5
 0027             COMMON ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
 0028             COMMON YEAR, CRSES, Q, W
 0029             COMMON WKOFF, INIT, WHERE
 0030             COMMON NEGFLG, ADBCON
 0031             COMMON TRACEF, RLSFLG, ENDFLG, PREFLG, YRFLG, YEARUN
            C
            C COMMON FOR COURSE ACTIVE MATRIX ELEMENTS
            C
 0032             COMMON ACTIVE (300), ACTCTR (300), ACTUTL (300), ACTNEG (300)
            C
            C DIMENSION AND DATA FOR SPECIAL SCHEDULER SUBROUTINE
            C
 0033             DIMENSION C (10), ISCHD (4, 50), DIV (13)
            C
 0034             DATA ISCHD/Z1000,3*Z0,Z1000,Z0,Z800,Z0,Z1000,Z100,Z4,Z0,2*Z1000,
                 *Z800,Z1000,Z1004,Z20,Z40,Z200,Z1008,Z100,Z804,Z80,Z810,Z408,Z81,
                 *Z40,Z1020,Z1040,Z810,Z820,Z841,2*Z104,Z410,Z1084,Z420,Z842,Z210,
                 *Z1084,Z444,Z108,2*Z888,Z1110,Z844,Z888,Z889,Z222,Z112,Z444,Z1112,
                 *Z488,Z489,Z244,Z1224,Z1124,Z248,Z1244,Z1224,Z1248,Z892,Z924,Z925,
                 *Z492,Z249,Z492,Z1249,Z4A4,Z492,Z4A4,Z A8A,ZA52,Z252,ZA49,Z1294,
                 *Z14A4,Z94A,ZA52,ZA95,Z54A,Z4A5,Z952,ZA95,Z554,Z555,Z52A,2*ZAAA,
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                     *Z1AA,2*ZAAA,Z1554,Z555,ZAAA,Z1555,ZAAA,Z555,ZAAA,Z1AAA,Z1554,ZAAA,
                     *Z1555,Z1AAA,Z156A,ZAB5,ZAAA,Z156A,Z1AAA,ZAAA,Z1AD5,Z156A,Z1AB4,
                     *Z65A,Z16AD,ZDB6,Z65A,Z6B5,Z15AD,Z15B5,Z15AC,ZDAD,Z15B6,ZDB6,Z1B5A,
                     *Z66D,Z15B6,Z16DA,Z1B6C,ZD66,Z1B6D,ZDDB,ZDB6,Z76D,Z16DB,ZDDB,ZEDA,
                     *ZDB7,ZDBB,ZEED,Z1B76,ZB76,Z1DBB,Z1776,Z1DDC,ZEED,Z1BBB,Z1777,ZEEE,
                     *Z7BB,Z1777,ZF7B,Z1BBA,ZEF7,Z1777,ZF7B,Z1BDE,Z7BD,Z1DEF,Z17BE,
                     *Z1EFA,ZEFB,Z1BEF,ZFDF,ZFBE,Z7EF,Z17DF,Z17EF,Z1BF6,ZF7E,Z1FBF,ZFF7,
                     *Z1EFE,ZF7B,Z1F7F,ZFFB,Z1FDE,ZFBF,Z1DFF,ZFFF,ZFFE,Z7FF,2*ZFFF,
                     *Z1EFE,ZFFB,Z1FFF,ZFFF,Z1FFF,Z7FF,Z1FFF,ZFFF,Z1FFE,ZFFF,2*Z1FFF,
                     *Z1FFE,ZFFF,Z1FFF/
                C
 0035                 DATA DIV/4096,2048,1024,512,256,128,64,32,16,8,4,2,1/
                C
 0036                 CASES = 0
                C
                C READ RUN PARAMET=AS:  'WHERE' IS INPUT DEVICE; 'FRSTYR & LASTYR' ARE
                C FIRST AND LAST FISCAL YEARS OF RUN.
                C
 0037                 READ (5, 1000, END = 2000) (WHERE, FRSTYR, LASTYR, ADRCON,
                     1 TRACEF, PREFLG, RLSFLG, ENDFLG, YRFLG, STAT, INIT)
                C
 0038            1000 FORMAT (4I4, 56X, 5I1, 1X, 2I1)
                C
 0039            2000 CONTINJE
                C
                C SET INIT FLAG - USED TO KEY MODEL PRERUN
                C CLAMP INIT AS USED TO SET NEGRUN FLAG WHOSE ACTUAL VALUE IS SIGNIFCANT
                C
 0040                 IF (INIT .GT. 1) INIT = 1
 0041                 NEGFLG = INIT
                C
                C SET TRACE FLAG - USED FOR DETAILED COURSE RUN PRINTOUT
 0042                 TRACEF = TRACEF + PREFLG + RLSFLG + ENDFLG
                C
                C CLAMP DEVICE TO READER OR DISK FOR DATA INPUT
                C
 0043                 IF (WHERE .NE. 10) WHERE = 5
                C
                C
                C FIND NUMBER OF YEARS FOR MODEL RUN - MAX 3 YEARS, PROTECT FOR NEGATIVE
                C FRSTYR IS FIRST FISCAL YEAR OF MODEL RUN, LASTYR IS LAST YEAR, YEAR IS
                C CURRENT YEAR OF RUN FOR OUTPUT REPORTS.
                C
                C TEST FOR MISSING DATA
 0044                 IF (FRSTYR) 26, 26, 27
                C
                C DATA MISSING-ASSUME 1975 & RUN 1 YEAR
 0045              26 YEAR = 1975
 0046                 YEARUN = 1
 0047                 GO TO 34
                C
                C HAVE A FIRST YEAR-TEST IF A LAST YEAR
 0048              27 IF (LASTYR) 28, 28, 29
                C
                C NO LAST YEAR-RUN 1 YEAR
 0049              28 YEAR = FRSTYR
 0050                 YEARUN = 1
 0051                 GO TO 34
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FORTRAN IV G LEVEL  21                  MAIN               DATE = 74265        22/44/14              PAGE 0003

                C
                C HAVE FIRST & LAST YEAR-FIND DELTA
  0052             29 YEARUN = LASTYR-FRSTYR
                C
                C TEST DELTA TO SEE IF YEARS IN RIGHT ORDER
  0053                IF (YEARUN) 31, 30, 32
                C
                C DELTA IS ZERO, BOTH YEARS SAME-RUN 1 YEAR, OK TO FALL THRU NEG ROUTINE
  0054             30 YEARUN = 0
                C
                C DELTA NEG-YEARS OUT OF ORDER, USE LAST YEAR AS FIRST
  0055             31 YEARUN = -YEARUN
  0056                YEAR = LASTYR
  0057                GO TO 33
                C
                C DELTA POSITIVE - SET YEAR
  0058             32 YEAR = FRSTYR
  0059             33 YEARUN = YEARUN + 1
  0060                IF (YEARUN .GT. 3) YEARUN = 3
                C
  0061             34 CONTINUE
                C
                C
                C PRINT CHARACTERISTICS UNIQUE TO THIS MODEL RUN
                C
  0062                WRITE (6, 1001)
  0063           1001 FORMAT ('1BEGIN TRAINING PROCESS FLOW MODEL EXECUTION - CHARACTERI
                     1STICS FOR THIS RUN ARE:')
                C
                C WRITE YEARS OF RUN
                C
  0064                WRITE (6, 1002)
  0065           1002 FORMAT ('0FISCAL YEARS FOR MODEL RUN')
                C
  0066                WRITE (6, 1003) YEAR
  0067           1003 FORMAT ('+', T32, I4)
                C
  0068                ITEM = YEAR + 1
  0069                IF (YEARUN .GE. 2) WRITE (6, 1004) ITEM
  0070           1004 FORMAT ('+', T40, I4)
                C
  0071                ITEM = ITEM + 1
  0072                IF (YEARUN .GE. 3) WRITE (6, 1005) ITEM
  0073           1005 FORMAT ('+', T48, I4)
                C
                C WRITE AOB CONSTANT AND METHOD OF CALCULATION
                C
  0074                IF (AOBCON .GT. 300) WRITE (6, 1006) AOBCON
  0075           1006 FORMAT ('0AVERAGE ON BOARD DAYS CONSTANT IS', I5, '  WEEKEND DAYS
                     1COUNTED IN STUDENT DAYS AND AOB CALCULATIONS')
                C
  0076                IF (AOBCON .LE. 300) WRITE (6, 1007) AOBCON
  0077           1007 FORMAT ('0AVERAGE ON BOARD DAYS CONSTANT IS', I5, '  ONLY WORKING
                     1DAYS USED IN STUDENT DAYS AND AOB CALCULATIONS')
                C
  0078                IF (WHERE .EQ. 5) WRITE (6, 1008)
  0079           1008 FORMAT ('0COURSE DATA INPUT DEVICE - READER;   COURSE NAMES INPUT
                     1- DUMMY;   STATISTICS INPUT DEVICE - READER')
                C
0080                  IF (WHERE .GE. 10) WRITE (6, 1009)
0081             1009 FORMAT ('0ALL INPUTS THIS RUN FROM UNLOADED DATA BASE')
0082                  WRITE (6, 1010) PREFLG, RLSFLG, ENDFLG, YRFLG
0083             1010 FORMAT ('0TRACE PRINTOUT FLAGS THIS RUN     PRERUN ', I1, ';   REL
                     1EASE ', I1, ';   COURSE END ', I1, ';   ANNUAL PRINTOUT ', I1)
                C
0084                  IF (INIT .GT. 0) WRITE (6, 1012)
0085             1012 FORMAT ('0INITIALIZATION FLAG IS SET - MODEL WILL INITIALIZE THOSE
                     1 COURSES THAT ARE IN SESSION AT 1ST QUARTER START')
                C
0086                  IF (ISTAT .GT. 0) WRITE (6, 11013)
0087            11013 FORMAT ('0STAT FLAG IS SET - MODEL WILL READ PASS/FAIL DATA FROM S
                     1TATISTICS CURVES AND OVERRIDE HISTORICAL RATES')
                C
                C END OF MODEL RUN DATA MESSAGES - OUTLINE ERROR MESSAGES
                C
0088                  WRITE (6, 1011)   ------------------------------------------------
0089             1011 FORMAT ('0--------------------------------------------------------',///)
                     *------------------------------------------------------------------

                C
                C READ COURSE DATA FROM DATA BASE INTERFACE INTO MATRIX
                C COURSE MATRIX SET UP FOR MAXIMUM OF 200 INDIVIDUAL COURSES
                C CRSES EQUALS NUMBER OF UNIQUE COURSES FOR THIS RUN
                C
                C
0090                  DO 1 I = 1, 200
                C
0091                  READ (WHERE, 10, END = 2) (CDP (I), SCHOOL (I), CONVA (I),
                     1 LENA (I), CAPA (I), RCAPA (I), CHGWK (I), OFFSET (I), CONVB (I),
                     2 LENB (I), CAPB (I), RCAPB (I), BAKLOG (I), DEMAND (I),
                     3 BDMAND  (I), NUSHOW (I), NADIS (I), FAIL (I), JNO (I), NEC (I))
                C
0092               10 FORMAT (A4, A6, I3, F3.1, 3I3, I3, I3, F3.1, 2I3, I2, 2I5, 4X,
                     2 2 F4.3, 1X, F4.3, 3X, 2 A4)
                C
0093                  CRSES = CRSES + 1
                C
0094                1 CONTINUE
0095                2 CONTINUE
                C
                C
                C READ STATISTICAL DATA FOR FAILURE RATES FROM STUDENT CHARACTERISTICS.
                C OVERWRITE HISTORICAL DATA PREVIOUSLY READ IN
                C READ COURSE J NUMBER, NEW FAILURE RATE
                C
0096                  IF (STAT .EQ. 0) GO TO 3010
0097                  ITEMI = 0
                C
0098             3001  READ (8, 3002,END = 3005) ITEM, TEM
0099             3002 FORMAT (A4, F4.3)
                C
                C SEE IF COURSE IN OUR FILE
0100                  DO 3004 I = 1, CRSES
0101                  IF (ITEM .NE. JNO (I)) GO TO 3004
                C
                C FOUND OUR COURSE - WRITE IN NEW FAIL RATE & BUMP COUNTER
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0102               FAIL (I) = TEM
0103               ITEM1 = ITEM1 + 1
0104               GO TO 3001
0105          3004 CONTINUE
             C
             C HERE IF COURSE NOT IN FILE - PRINT ERROR MESSAGE
0106               WRITE (6, 3006) ITEM
0107          3006 FORMAT (' STATISTICS UPDATE ROUTINE - COURSE NOT IN FILE J NUMBER
                  1', A4, '  FAILURE RATE', F5.1, '%')
0108               GO TO 3001
             C
             C END STATISTICS UPDATE - PRINT TOTAL COURSES FOUND
0109          3005 WRITE (6, 3007) ITEM1
0110          3007 FORMAT ('STATISTICS UPDATE ROUTINE - ', I3, ' COURSES UPDATED')
             C
0111          3010 CONTINUE
             C
             C INITIALIZE 'WHERE' FOR DATA READ IN YEAR END SUBROUTINE
             C INIT WHERE TO 12 FOR DUMMY DATA READ (CARD INPUT), 11 FOR DATA BASE RD
             C
0112               IF (WHERE .EQ. 5) WHERE = 12
0113               IF (WHERE .LE. 11) WHERE = 11
             C
             C
             C
             C INITIALIZE COURSE AND RUN MATRICES
             C
0114               DO 20 I = 1, CRSES
             C
             C INIT TO ZERO RUN STORAGE AREAS IN COURSE MATRIX
             C
0115               CRSRUN (I) = 0
0116               BKLGPL (I) = 0
0117               NDSHPL (I) = 0
0118               RPOOL (I) = 0
             C
             C
             CC INITIALIZE BACKLOG POOL - BAKLOG IS COURSE BACKLOG IN WEEKS, CONVERT
             C TO STUDENT DEMAND & INIT TO BKLGPL. ZERO BACKLOG IF NEGATIVE INPUT ERR
             C INIT BACKLOG POOL TO B CONVENINGS IF NO 'A' CONVENINGS.
             C
0119               IF (BAKLOG (I)) 11, 12, 12
             C
0120            11 BAKLOG (I) = 0
             C
0121               WRITE (6, 11011) CDP (I)
0122         11011 FORMAT (1H , 'NEGATIVE BACKLOG FOR COURSE ', A4,
                  1 '.  BACKLOG ZEROED FOR THIS RUN')
             C
             C
             C SET UP DATA FOR BACKLOG CALCULATIONS.  TRAP OUT NEGATIVE CONVENINGS.
             C TEST B CONVENINGS FIRST
             C
0123            12 IF (CONVB (I)) 10011, 13, 10013
             C
             C HERE IF NEGATIVE B CONVENINGS.
             C
0124         10011 CONVB (I) = 0
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0125              WRITE (6, 10012) COP (I)
0126        10012 FORMAT (' NEGATIVE CONVENINGS FOR COURSE ', A4,' ZEROED THIS RUN')
0127              GO TO 11
            C
            C HAVE POSITIVE B CONVENINGS, LOAD DATA FOR NEXT TEST.
0128        10011 TEM2 = CONVB (I)
0129              TEM1 = CAPB (I) - RCAPB (I)
            C
            C NOW TEST A CONVENINGS.
            C
0130           11 IF (CONVA (I)) 10014, 14, 11014
0131        10014 CONVA (I) = 0
0132              WRITE (6, 10012) COP (I)
0133              GO TO 14
            C
            C HERE IF HAVE POSITIVE A CONVENINGS - OVERWRITE B DATA.
            C
0134        11014 TEM1 = CAPA (I) - RCAPA (I)
0135              TEM2 = CONVA (I)
            C
            C NOW TEST DATA FOR BACKLOG CALCULATION.
0136           14 IF (BAKLOG (I))15, 15, 10015
0137        10015 IF (TEM2) 15, 15, 11015
            C
            C CALCULATE BACKLOG
            C TEM1 IS CAP / CONV, TEM2 IS WEEKS BTWEEN CONV, TEM3 IS BKLOG IN CONVEN
            C
0138        11015 TEM2 = 50. / TEM2
0139              TEM3 = BAKLOG (I) / TEM2
0140              BKLGPL (I) = TEM1 * TEM3
0141           15 CONTINUE
            C
            C TEST CHANGE WEEK FOR NEGATIVE VALUE - TESTED AGAIN AT RUN TIME
0142              IF (CHGWK (I)) 711, 712, 712
0143          711 WRITE (6, 11035) COP (I)
0144          712 CONTINUE
            C
            C INITIALIZE OFFSET, ZERO OFFSET IF GT 1 YEAR TO PROJECT SCHED MATRIX
            C OFFSET USED TO MOVE SCHEDULE MATRIX (ADVANCE OR DELY A COURSE START)
            C
0145              IF (OFFSET (I)) 16, 18, 17
            C
            C OFFSET IS NEGATIVE - SEE IF COURSE SHOULD BE PRESTARTED -NEGSET FLG ON
            C CRITERIA IS THAT OFFSET BE LESS THAT -13 WEEKS
            C
0146           16 IF (OFFSET (I) .GT. -13) NEGFLG = 1
            C
            C ZERO OFFSET IF GREATER THAN 1 YEAR TO PROTECT SCHEDULE MATRIX
            C
0147           17 ITEM = OFFSET (I)
0148              IF (IABS (ITEM) .LE. 51) GO TO 18
0149              OFFSET (I) = 0
0150              WRITE (6, 10017) COP (I)
0151        10017 FORMAT (' OFFSET GT 1 YEAR FOR COURSE ', A4, ' ZEROED THIS RUN.')
            C
0152           18 CONTINUE
            C
            C
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FORTRAN IV G LEVEL  21                MAIN              DATE = 74265         22/44/14              PAGE 0007

                 C INITIALIZE COURSE TOTALS MATRIX
                 C
 0153                  DO 19 J = 1, 5
                 C
 0154                  TCAP (J, I) = 0
 0155                  TUTIL (J, I) = 0
 0156                  TFAIL (J, I) = 0.
 0157                  TNOSHO (J, I) = 0
 0158                  TNADIS (J, I) = 0.
 0159                  TSKLOG (J, I) = 0
 0160                  TSDAYS (J, I) = 0
 0151                  TSETPK (J, I) = 0
 0162                  TCONV (J, I) = 0
                 C
 0163               19 CONTINUE
                 C
                 C TEST DEMAND FOR NEGATIVE VALUE
 0164                  IF (DEMAND (I)) 701, 703, 703
 0165              701 WRITE (6, 702) COP (I)
 0166              702 FORMAT (' NEGATIVE DEMAND FOR COURSE ', A4, '  ZEROED THIS RUN')
 0167              703 CONTINUE
                 C
                 C TEST BUPERS SEATS VS DEMAND
                 C
 0168                  IF (BUMAND (I)) 10018, 20, 10019
                 C
 0169            10018 WRITE (6, 11018) COP (I)
 0170            11018 FORMAT(' NEGATIVE BUPERS DEMAND CUURSE ', A4,'  ZEROED THIS RUN')
 0171                  BDMAND (I) = 0
 0172                  GO TO 20
                 C
 0173            10019 IF (BCAPA (I) + BCAPB (I)) 11019, 11019, 20
                 C
 0174            11019 WRITE (6, 11020) COP (I)
 0175            11020 FORMAT (' WARNING - BUPERS DEMAND WITH NO BUPERS SEATS COURSE ',
                      1 A4, '   BUPERS DEMAND WILL AFFECT LOCAL QUOTA CONTROL INPUTS')
                 C
 0176               20 CONTINUE
                 C
                 C
                 C
                 C INITIALIZE COURSE ACTIVE MATRIX
                 C COURSE ACTIVE MATRIX ALLOWS 300 COURSES TO BE ACTIVE IN A GIVEN WEEK
                 C
 0177                  DO 25  I = 1, 300
                 C
 0178                  ACTIVE (I) = 0
 0179                  ACTCTR (I) = 0.
 0180                  ACTUTL (I) = 0
 0181                  ACTNEG (I) = 0
 0182               25 CONTINUE
                 C
                 C OUTLINE ERROR MESSAGES
 0183                  WRITE (6, 1011)
                 C
 0184                  IF (NEGFLG .GT. 0) WRITE (6, 1013)
 0185            1013 FORMAT ('OMODEL PRERUN INITIALIZATION FLAG IS SET - 4TH QUARTER WI
                      1LL BE RUN TO INIT COURSES IN SESSION AT MODEL START',//)
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FORTRAN IV G LEVEL  21                MAIN             DATE = 74265         22/44/14              PAGE 0008
                C
                C
                C
                C ****** END MODEL INITIALIZATION - BEGIN ACTIVE MODEL LOOP ******
                C
                C
                C
                C
                C YEAR LOOP - ALLOWS MODEL TO RUN MULTIPLE YEARS, YEAR INPUT ON PARM CRD
                C YEARUN HANDED OFF TO OTHER SUBROUTINES TO TEST CHANGE DATE
                C
                C
 0186                 Y = YEARUN
 0187                 DO 999 YEARUN = 1, Y
                C
                C
                C QUARTER LOOP - MODEL RUNS ON 4 QUARTERS OF 13 WEEKS
                C
                C
 0188                 DO 900 TEMQ = 1, 4
                C
                C 10000 IS ENTRY FOR PRERUN END
 0189           10000 CONTINUE
 0190                 Q = TEMQ
                C
                C TEST FOR NEGFLAG, OVERRIDE Q IF PRERUN
 0191                 IF (NEGFLG .GT. 0) Q = 4
                C
                C ****** BEGIN LOWEST ORDER (WEEKLY) CYCLING FOR TPF MODEL ******
                C LOOP THROUGH ENTIRE COURSE MATRIX ON A WEEKLY BASIS
                C
 0192                 DO 800 W = 1, 13
                C
                C
                C INITIALIZE 'LAST' TO 1, USED TO FIND LAST USED POSITION IN CRS ACTIVE
                C MATRIX BY CRSRLS SUBROUTIVE
                C
 0193                 LAST = 1
                C
                C LOOP THROUGH COURSE MATRIX
                C
 0194                 DO 500 I = 1, CRSES
                C
                C SET UP PROPER COURSE CONVENING, LENGTH, & CAPACITY DATA, DEPENDING ON
                C WHETHER OR NOT A COURSE CHANGE DATE HAS PASSED
                C USE A CONVENINGS IF NEGFLG (PRERUN) FLAG IS ON
                C
 0195                 IF (NEGFLG) 11034, 11034, 36
                C
 0196           11034 IF (CHGWK (I)) 10035, 36, 35
                C
                C NEGATIVE CHANGE WEEK - TRAP OUT, ZERO, & ERROR MESSAGE
 0197           10035 CHGWK (I) = 0
 0198                 WRITE (6, 11035) COP (I)
 0199           11035 FORMAT (' NEGATIVE CHANGE WEEK COURSE ',A4,' ZEROED THIS RUN')
 0200                 GO TO 36
                C
 0201              35 NOW = ((Q - 1) * 13 + W) + (52 * (YEARUN - 1))
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 0202                IF (NWK .GE. CHGWK (I)) GO TO 40
                C
                C DATE TO CHANGE COURSE DATA HAS NOT OCCURED OR NO CHANGE DATA
                C SET WEEKOFF EQUAL TO INPUT OFFSET.
                C
 0203             30 CONV = CONVA (I)
 0204                LEN = LENA (I)
 0205                CAP = CAPA (I)
 0206                BCAP = BCAPA (I)
 0207                COURSE = I
 0208                WKOFF = OFFSET (I)
 0209                GO TO 50
                C
                C CHANGE DATE HAS OCCURED - LOAD DATA FROM CHANGE DATA (B)
                C SET WEEKOFF TO CHANGE DATE TO INIT SCHEDULE MATRIX
                C
 0210             40 CONV = CONVB (I)
 0211                LEN = LENB (I)
 0212                CAP = CAPB (I)
 0213                BCAP = BCAPB (I)
 0214                WKOFF = CHGWK (I) - 1
                C
                C ADD 1000 TO COURSE POINTER AS FLAG THAT CHANGE DATE PASSED
                C
 0215                COURSE = I + 1000
                C
 0216             50 CONTINUE
                C
                C TEST FOR CONVENINGS, SKIP IF CONVENINGS LE 0
                C
 0217                IF (CONV) 500, 500, 51
                C
                C
                C
                C SIMULTANEOUS COURSES SET UP FOR THOSE COURSES THAT MEET MORE THAN ONCE
                C PER WEEK (>50 CONV), OR FOR COURSES WHOSE LENGTH IS SUCH THAT NEW
                C SESSIONS CONVENE BEFORE THE PREVIOUS SESSION GRADUATES.
                C
                C
                C SET UP COUNTER 'SIMUL' TO INDICATE NUMBER OF SESSIONS OF THE SAME
                C COURSE CONVENING SIMULTANEOUSLY DUE TO CONVENING FREQ GT THAN 1 / WEEK
                C MULTIPLE CONVENING SCHEDULES SET UP AS NEEDED IN ARRAY C (I), MAX 10.
                C
 0218             51 DIVSR = ((CONV - 1) / 50) + 1
 0219                QUOT = CONV
 0220                SIMUL = DIVSR
                C
                C NOW BREAK UP COURSE INTO SEPARATE SECTIONS, WITH APPROX SAME NUMBER
                C OF INDIVIDUAL CONVENINGS, AND EXACTLY SAME NUMBER TOTAL CONV.
                C
 0221                DO 100 II = 1, SIMUL
 0222                IF (DIVSR .LE. 0) GO TO 100
 0223                C(II) = QUOT / DIVSR
 0224                DIVSR = DIVSR - 1
 0225                QUOT = QUOT - C (II)
 0226            100 CONTINUE
                C
                C
```

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                C CALC OFFSET - OFFSET AVAILABLE AS A MODEL INPUT TO DELAY OR ADVANCE
                C A COURSE CONVENING SCHEDULE
                C
                C TEST FOR OFFSET
 0227                 IF (NNOFF) 152, 151, 152
                C
                C NO OFFSET, SET WEEKS & QUARTERS TO ACTUAL
                C
 0228             151 QI = Q
 0229                 WI = W
 0230                 GO TO 160
                C
                C HAVE OFFSET, STRAIGHTEN OUT IF NEGATIVE (PRESTART)
                C
 0231             152 ITEM = NNOFF
                C
                C MODIFY QUARTERS & WEEKS TO WEEKS
 0232                 ITEMI = ((Q - 1) * 13) + W
                C
                C SUBTRACT OFFSET
 0233                 ITEMI = ITEMI - ITEM
                C
                C SKIP CRSRLS IF 0 OR NEG
 0234                 IF (ITEMI) 500, 500, 153
                C
                C WEEKS POSITIVE, CLAMP TO 52
 0235             153 IF (ITEMI .GT. 52) ITEMI = ITEMI - 52
                C
                C CONVERT BACK INTO WORKING WEEK FOR SCHEDULE MATRIX
                C
 0236                 QI = (ITEMI / 13) + 1
 0237                 WI = ITEMI - ((QI - 1) * 13)
 0238             160 CONTINUE
                C
 0239                 DO 200 I2 = 1, SIMUL
 0240                 ITEM = C (I2)
 0241                 IF (ITEM .LE. 0) GO TO 200
 0242                 ITEMI = ISCHD (QI,ITEM) / DIV (WI)
                C
 0243                 IF (((ITEMI/ 2) * 2) .EQ. ITEMI)  GO TO 200
                C
                C COURSE SECTION CONVENES THIS WEEK, CALL COURSE RELEASE -TO ACTIVE MTRX
                C
 0244                 CALL CRSRLS (I)
                C
 0245             200 CONTINUE
 0246             500 CONTINUE
                C
                C SAVE NUMBER OF COURSES RELEASED (OR ACTIVE) THIS WEEK
 0247                 NUMRUN = LAST
                C
                C
                C
                C **** END COURSE RELEASE - NOW CHECK ACTIVE MATRIX FOR COMPLETIONS ****
                C
                C
                C SEARCH COURSE ACTIVE MATRIX FOR COURSES THAT END THIS WEEK
                C ACTIVE (I) CONTAINS RELATIVE COURSE NUMBER, CRS ACTIVE IF GT ZERO
```

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FORTRAN IV G LEVEL  21                 MAIN              DATE = 74265         22/44/14              PAGE 0011
                C
                C DON'T TERMINATE OR COUNT DOWN COURSES DURING CHRISTMAS RECESS.
                C
 0248                 IF (Q .EQ. 2 .AND. W .EQ. 13) GO TO 601
 0249                 IF (Q .EQ. 3 .AND. W .EQ.  1) GO TO 601
                C
                C SKIP COURSE END IF NEGFLAG (PRESTART) IS ON
 0250                 IF (NEGFLG .GT. 0) GO TO 601
                C
 0251                 DO 600 I = 1, 300
 0252                 IF (ACTIVE (I)) 600, 600, 501
                C
                C COURSE ACTIVE - SUBTRACT 1 FROM WEEKS TO END & TEST IF COMPLETE
                C ACTCTR (I) CONTAINS WEEKS TILL CRS END, COURSE ENDS IF 0 OR NEGATIVE
                C
 0253             501 NUMRUN = 1
 0254                 ACTCTR (I) = ACTCTR (I) - 1.
 0255                 IF (ACTCTR (I)) 502, 502, 600
                C
                C COURSE ENDS THIS WEEK - CALL COURSE END SUBROUTINE
                C
 0256             502 CALL CRSEND (I)
                C
 0257             600 CONTINUE
 0258             601 CONTINUE
                C
                C//////////////////////////////////////////////////////////////////////
                C TRACE PRINT ROUTINE - PRINT ONLY IF PROPER TRACE FLAG IS SET
                C
 0259                 IF (TRACEF .GT. 0) WRITE (6, 11134) W, Q, YEAR, NUMRUN
 0260           11134 FORMAT (' TRACE- END OF WEEK    WEEK =', I3, '(   QUARTER =', I2,
                    1'(   YEAR =', I5, 5X, 'COURSES ACTIVE THIS WEEK =', I4,/)
                C
                C//////////////////////////////////////////////////////////////////////
                C
                C ****** END WEEKLY COURSE LOOP - END COURSE START AND COMPLETE ******
                C
 0261             800 CONTINUE
                C
                C TEST IF NEGFLG IS ON, INDICATING THAT QUARTER RUN PRIOR TO THE START
                C OF MODEL FISCAL YEAR CYCLING.
                C
 0262                 IF (NEGFLG) 802, 802, 801
                C
                C NEGFLG ON, CALL SUBROUTINE PRERUN, CLEAR FLAG, AND BRANCH TO BEGINNING
                C OF QUARTER CYCLING
                C
 0263             801 NEGFLG = 2
 0264                 CALL PRERUN (2)
 0265                 NEGFLG = 0
 0266                 GO TO 10000
                C
 0267             802 CONTINUE
                C
                C END QUARTER LOOP - CALL QRTEND SUBROUTINE TO COLLECT QUARTERLY DATA.
                C
 0268                 CALL QRTEND (Q)
                C
```

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FORTRAN IV G LEVEL  21                MAIN                DATE = 74265        22/44/14            PAGE 0012

0269          900 CONTINUE
            C
            C
            C END ANNUAL (4 QUARTERS) LOOP - CALL YEAR END SUBROUTINE TO AGGREGATE
            C AND PRINT ANNUAL TOTALS.
            C
0270              CALL YEARND (Y)
            C
0271          999 CONTINUE
            C
0272              WRITE (6, 1999) CRSES
0273         1999 FORMAT (1H0, T39, '**** NORMAL END OF TPF MODEL - ', I3,
                 1 ' COURSES PROCESSED ****')
            C
0274              STOP
0275              END
```

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FORTRAN IV G LEVEL  21             CRSRLS            DATE = 74265        22/44/14              PAGE 0002
                 C SEARCH ACTIVE MATRIX FOR FIRST AVAILABLE SLOT FOR NEW ACTIVE CONVENING.
                 C ACTIVE (Y) IS ZERO IF NOT IN USE, HAS POINTER TO CRSE MATRIX IF IN USE
                 C LAST IS POSITION LAST USED TO INSERT A COURSE, START SEARCH FROM THERE
                 C LAST IS 1 IF THIS IS FIRST COURSE RELEASE FOR THE WEEK.
                 C
                 C
                 C
                 C TEST IF LOCATION UNUSED IN ACTIVE MATRIX, EXIT IF FREE.
                 C
 0034                  DO 10 Y = LAST, 300
 0035                  IF (ACTIVE (Y)) 50, 50, 10
 0036               10 CONTINUE
                 C
                 C
                 C HERE IF TABLE FULL - CANNOT RELEASE COURSE-WRITE ERROR MESSAGE.
                 C
 0037                  WRITE (6, 1000)  (CDP (X))
 0038             1000 FORMAT (1H0, 'COURSE ACTIVE TABLE FULL - COURSE NOT RELEASED',
                      1 '    COURSE NUMBER IS', A6)
                 C
                 C EXIT SUBROUTINE
                 C
 0039                  GO TO 999
                 C
                 C
                 C HAVE FOUND OPENING IN TABLE, OPENING IS 'Y', COURSE POINTER IS 'X'.
                 C
                 C TEST IF NEGFLG IS ON ( INDICATES MODEL PRESTART CONVENING).
                 C
 0040               50 IF (NEGFLG) 60, 60, 51
                 C
                 C HERE IF FLAG IS ON - CALL PRESTART SUBROUTINE TO TEST IF COURSE SHOULD
                 C BE STARTED.  INIT RETURN CODE (DUMMY) TO 0
                 C
 0041               51 DUMMY = 0
 0042                  CALL PRERUN (1)
                 C
                 C RETURN CODE 1 IF COURSE TO BE STARTED, 0 IF TO SKIP (DUMMY)
                 C IF COURSE TO BE STARTED, SKIP OVER QUARTERLY TOTAL ACCUMULATE.
                 C
 0043                  IF (DUMMY) 999, 999, 63
                 C
                 C
                 C COURSE SHOULD BE RELEASED NORMALLY - ACCUMULATE TOTALS IN QUARTER MTRX
                 C FOR CONVENINGS AND CAPACITY.
                 C
 0044               60 TCONV (Q, X) = TCONV (Q, X) + 1
 0045                  TCAP (Q, X) = TCAP (Q, X) + CAP
                 C
                 C LOAD ACTIVE MATRIX & BUMP CRSRUN COUNTER IN COURSE MATRIX, PRESTART
                 C COURSES ENTER ROUTINE HERE.  SAVE LAST AS NEXT POINTER TO ACTIVE MATRX
                 C
 0046               63 CRSRUN (X) = CRSRUN (X) + 1
 0047                  ACTIVE (Y) = COURSE
 0048                  ACTCTR (Y) = LEN
 0049                  ACTNEG (Y) = 0
 0050                  LAST = Y
                 C
```

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FORTRAN IV G LEVEL  21                 MAIN                DATE = 74265        22/44/14             PAGE 0001

0001              SUBROUTINE CRSRLS (X)
            C
            C COURSE RELEASE (START) SUBROUTINE - RELEASES COURSE, CALCULATES PUPERS
            C SEATS & ATTENDANCE, LOCAL QUOTA CONTROL SCHEDULING, BACKLOG, NOSHOWS,
            C SUBSTITUTE QUOTAS, AND ULTIMATE CLASS UTILIZATION, INCLUDING SETBACKS.
            C
            C COURSE TOTALS - ADDED TO QUARTER TOTALS AS COURSE RELEASES:
            C CAPACITY, UTILIZATION, NOSHOWS, BACKLOG, SUBSTITUTE QUOTAS.
            C
0002              IMPLICIT INTEGER*2 (A-Z,$)
0003              REAL*4 BKLGPL
0004              REAL*4 NOSHPL, BPOOL, NADIS, FAIL
0005              REAL*4 ACTCTR, TFAIL, TNADIS
0006              REAL*4 LEN, LENA, LENB
0007              REAL*4 TEM, TEM1, TEM2, TEM3, TEM4, TEM5
0008              REAL*4 NOSHOW
0009              REAL*8 SCHOOL
0010              INTEGER*4 WHERE
0011              INTEGER*4 CDP, JNO
0012              INTEGER*4 NEC
0013              INTEGER*4 TSDAYS
0014              INTEGER*4 ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
0015              INTEGER*4 TCAP, TUTIL, TPASS
            C
            C COMMON DATA FOR CLASS DATA MATRIX
            C
0016              COMMON CDP (200), SCHOOL (200), CRSRUN (200), CONVA (200)
0017              COMMON LENA (200), CAPA (200), BCAPA (200), OFFSET (200)
0018              COMMON CHGWK (200), CONVB (200), LENB (200), CAPB (200)
0019              COMMON BCAPB (200), NEC (200), BAKLOG (200), NOSHOW (200)
0020              COMMON BKLGPL (200), NOSHPL (200), DEMAND (200), BDMAND (200)
0021              COMMON BPOOL (200), FAIL (200), NADIS (200), JNO (200)
            C
            C QUARTERLY AND ANNUAL COURSE TOTALS ACCUMULATION
            C
0022              COMMON TCAP (5, 200), TUTIL (5, 200), TSETBK (5, 200)
0023              COMMON TSDAYS (5, 200), TFAIL (5, 200), TNOSHO (5, 200)
0024              COMMON TNADIS (5, 200), TBKLOG (5, 200), TCONV (5, 200)
            C
            C COMMON FOR COMMUNICATION BETWEEN SUBROUTINES
            C
0025              COMMON DUMMY
0026              COMMON CONV, LEN, CAP, BCAP, LAST, COURSE
0027              COMMON TEM, TEM1, TEM2, TEM3, TEM4, TEM5
0028              COMMON ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
0029              COMMON YEAR, CRSES, Q, W
0030              COMMON WKOFF, INIT, WHERE
0031              COMMON NEGFLG, ADBCON
0032              COMMON TRACEF, RLSFLG, ENDFLG, PREFLG, YRFLG, YEARUN
            C
            C COMMON FOR COURSE ACTIVE MATRIX ELEMENTS
            C
0033              COMMON ACTIVE (300), ACTCTR (300), ACTUTL (300), ACTNEG (300)
            C
            C
            C
            C
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FORTRAN IV G LEVEL  21                CRSRLS             DATE = 74265          22/44/14                PAGE 0003

                 C
                 C CHECK IF BUPERS HAS ANY CONTROLLED DEMAND FOR THIS COURSE-ITEM IS NUMB
                 C CURRENTLY MODEL ALLOWS BUPERS TO OVERBOOK THERE COURSE
                 C
 0051                  ITEM = 0
 0052                  IF (BDMAND (X)) 200, 200, 101
                 C
                 C BUPERS HAS DEMAND - CALC DEMAND PER CONVENING.
                 C TEM EQUALS BUPERS STUDENTS (REAL).
                 C
 0053               101 TEM = 0.
 0054                  TEM1 = CONV
 0055                  IF (CONV .GT. 0) TEM = BDMAND (X) / TEM1
                 C
                 C NOW PUT ANY FRACTIONAL DEMAND INTO SAVE POOL. ITEM NOW EQ TO BUPERS
                 C STUDENTS (INTEGER).
                 C
 0056                  ITEM = TEM
 0057                  BPOOL (X) = BPOOL (X) + (TEM - ITEM)
                 C
 0058                  IF (BPOOL (X) .LT. 1) GO TO 105
                 C
                 C POOL HAS MORE THAN 1 STUDENT, RELEASE & CLEAR POOL OF WHOLE STUDENTS.
                 C
 0059                  ITEM1 = BPOOL (X)
 0060                  BPOOL (X) = BPOOL (X) - ITEM1
 0061                  ITEM = ITEM + ITEM1
                 C
                 C END BUPERS DEMAND, ITEM = NUMBER OF STUDENTS, 0 IF NO BUREAU DEMAND.
                 C
                 C
 0062               105 CONTINUE
                 C ENTRY IF NO BP DEMAND.
 0063               200 CONTINUE
                 C
                 C
                 C NOW RELEASE LOCAL QUOTA CONTROL DEMAND - SEATS AVAILABLE = CAPACITY
                 C MINUS BUREAU CONTROLLED SEATS.
                 C
 0064                  ITEM1 = CAP - BCAP
 0065                  IF (ITEM1 .LT. 0) ITEM1 = 0
                 C
                 C FIND LOCAL DEMAND FOR COURSE - DEMAND = ANNUAL DEMAND / CONVENINGS.
                 C ADD THIS DEMAND TO BACKLOG POOL
                 C
 0066                  TEM = CONV
 0067                  BKLGPL (X) = BKLGPL (X) + (DEMAND (X) / TEM)
                 C
                 C RELEASE LOCAL STUDENTS - MAKE INIT ASSUMPTION ENTIRE POOL CAN FIT.
                 C ITEM2 EQUALS LOCAL QUOTA CONTROL STUDENTS.
                 C
 0068                  ITEM2 = BKLGPL (X)
                 C
                 C TEST IF POOL GT CAPACITY.
                 C CLAMP TO CAPACITY IF GREATER.
                 C ITEM1 IS NOW LOCAL QUOTA CONTROL CAPACITY
                 C
 0069                  IF (ITEM2 .GT. ITEM1) ITEM2 = ITEM1
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FORTRAN IV G LEVEL  21              CRSRLS              DATE = 74265         22/44/14              PAGE 0004

                  C
                  C RELEASE THESE STUDENTS TO COURSE, CLEAR FROM POOL.
 0070                   BKLGPL (X) = BKLGPL (X) - ITEM2
                  C
                  C NOW TEST FOR LOCAL NO SHOWS
 0071                   NOSHPL (X) = NOSHPL (X) + (ITEM2 * NOSHOW (X))
                  C
                  C SEE IF GT 1 IN POOL.
 0072                   ITEM3 = NOSHPL (X)
 0073                   IF (ITEM3) 111, 111, 110
                  C
                  C NO SHOWS GT 1, ADD TO TOTALS & TAKE FROM CLASS.
                  C ITEM3 IS STUDENTS FROM NO SHOW POOL
                  C
 0074               110 TNOSHO (Q, X) = TNOSHO (Q, X) + ITEM3
 0075                   ITEM2 = ITEM2 - ITEM3
 0076                   NOSHPL (X) = NOSHPL (X) - ITEM3
 0077               111 CONTINUE
                  C
                  C NOW TOTAL STUDENTS & SEE IF FULL CAPACITY.
                  C ITEM IS BUPERS STUDENTS, ITEM2 IS LOCAL STUDENTS AFTER NO SHOW
                  C
 0078                   ACTUTL (Y) = ITEM + ITEM2
                  C
 0079                   ITEM4 = 0
 0080                   IF (ACTUTL (Y) .GE. CAP) GO TO 114
 0081                   ITEM4 = (.1 * CAP) + .3
                  C
                  C CAPACITY NOT FULL - CHECK IF CAN RELEASE THESE FROM BACKLOG POOL
                  C
 0082                   ITEM5 = BKLGPL (X)
 0083                   IF (ITEM5) 114, 114, 113
                  C
                  C BACKLOG POOL GT 1, RELEASE SUBSTITUTE QUOTAS
                  C CLAMP STUDENTS TO MAX IN POOL.
                  C
 0084               113 IF (ITEM5 .LT. ITEM4) ITEM4 = ITEM5
 0085                   BKLGPL (X) = BKLGPL (X) - ITEM4
 0086                   ACTUTL (Y) = ACTUTL (Y) + ITEM4
                  C
                  C IF NO SHOW FLAG IS OFF ADD UTILIZATION TO QUARTERLY FIGURES.
 0087               114 CONTINUE
 0088                   IF (NEGFLG .LE. 0) TUTIL (Q, X) = TUTIL (Q, X) + ACTUTL (Y)
                  C
 0089               999 CONTINUE
                  C
                  C/////////////////////////////////////////////////////////////////////
                  C TRACE PRINT ROUTINE - PRINT ONLY IF PROPER TRACE FLAG IS SET
                  C
 0090                   IF (RLSFLG) 1010, 1010, 1001
 0091              1001 WRITE (6, 1002) CDP (X), ACTUTL (Y), LEN, X, LAST
                       1 , ITEM, ITEM2, ITEM4, ITEM3
 0092              1002 FORMAT (' RELEASE- CDP= ', A4, ';  STUDENTS= ', I3, ';  LENGTH='
                       1,F5.1,';  CRS SEQ=',I4,';  RUN POSITN=', I4, ';  BUPRS=', I3, ';
                       2LOCAL=', I3, ';  SURQTA=', I2,';  NOSHO=', I3)
                  C
 0093                   IF (NEGFLG .GT. 0) WRITE (6, 1003) DUMMY
 0094              1003 FORMAT ('+', T132, 'P', I1)
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FORTRAN IV G LEVEL  21                 CHSRLS             DATE = 74265           22/44/14              PAGE 0005

              C
 0095          1010 CONTINUE
              C
              C//////////////////////////////////////////////////////////////////////////
              C
 0096                RETURN
 0097                END
```

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FORTRAN IV G LEVEL  21                MAIN              DATE = 74265        22/44/14              PAGE 0001

  0001                SUBROUTINE CRSEND (X)
                C
                C SUBROUTINE CRSEND CALCULATES PASS/FAIL/SETBACK, NACDISENROLLMENT,
                C AND CALCULATES UTILIZATION, TOTALS FOR QUARTERLY REPORT
                C
  0002                IMPLICIT INTEGER*2 (A-Z,$)
  0003                REAL*4 BKLGPL
  0004                REAL*4 NOSHPL, BPOOL, NADIS, FAIL
  0005                REAL*4 ACTCTR, TFAIL, TNADIS
  0006                REAL*4 LEN, LENA, LENB
  0007                REAL*4 TEM, TEM1, TEM2, TEM3, TEM4, TEM5
  0008                REAL*4 NOSHOW
  0009                REAL*4 SETBAK
  0010                REAL*8 SCHOOL
  0011                INTEGER*4 WHERE
  0012                INTEGER*4 CDP, JND
  0013                INTEGER*4 NEC
  0014                INTEGER*4 TSDAYS
  0015                INTEGER*4 ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
  0016                INTEGER*4 TCAP, TUTIL, TPASS
                C
                C COMMON DATA FOR CLASS DATA MATRIX
                C
  0017                COMMON CDP (200), SCHOOL (200), CRSRUN (200), CONVA (200)
  0018                COMMON LENA (200), CAPA (200), BCAPA (200), OFFSET (200)
  0019                COMMON CHGWK (200), CONVB (200), LENB (200), CAPB (200)
  0020                COMMON BCAPB (200), NEC (200), BAKLOG (200), NOSHOW (200)
  0021                COMMON BKLGPL (200), NOSHPL (200), DEMAND (200), BDMAND (200)
  0022                COMMON BPOOL (200), FAIL (200), NADIS (200), JND (200)
                C
                C QUARTERLY AND ANNUAL COURSE TOTALS ACCUMULATION
                C
  0023                COMMON TCAP (5, 200), TUTIL (5, 200), TSETBK (5, 200)
  0024                COMMON TSDAYS (5, 200), TFAIL (5, 200), TNOSHO (5, 200)
  0025                COMMON TNADIS (5, 200), TBKLOG (5, 200), TCONV (5, 200)
                C
                C COMMON FOR COMMUNICATION BETWEEN SUBROUTINES
                C
  0026                COMMON DUMMY
  0027                COMMON CONV, LEN, CAP, BCAP, LAST, COURSE
  0028                COMMON TEM, TEM1, TEM2, TEM3, TEM4, TEM5
  0029                COMMON ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
  0030                COMMON YEAR, CRSES, Q, W
  0031                COMMON WKOFF, INIT, WHERE
  0032                COMMON NEGFLG, ADBCON
  0033                COMMON TRACEF, RLSFLG, ENDFLG, PREFLG, YRFLG, YEARUN
                C
                C COMMON FOR COURSE ACTIVE MATRIX ELEMENTS
                C
  0034                COMMON ACTIVE (300), ACTCTR (300), ACTUTL (300), ACTNEG (300)
                C
  0035                I2 = 0
  0036                ITEM2 = 0
  0037                SETBAK = .5
  0038                J = ACTIVE (X)
                C
                C
```

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FORTRAN IV G LEVEL  21              C-SEND           DATE = 74265          22/44/14                PAGE 0002

                 C CALLING PARAMETER 'X' IS SUBSCRIPT OF COURSE IN ACTIVE MATRIX.
                 C ACTIVE (X) CONTAINS RELATIVE COURSE NUMBER IN COURSE MATRIX, HAS 1000
                 C ADDED IF COURSE RELEASED AFTER COURSE CHANGE DATE
                 C
 0039                  IF (J .GT. 1000) GO TO 10
                 C
                 C COURSE RELEASED PRIOR TO CHANGE DATE - GET LENGTH FROM 'A' LENGTH
                 C
 0040                  LEN = LENA (J)
 0041                  GO TO 20
                 C
                 C ACTIVE (I) GT 1000, THUS CRS RELEASED AFTER SCHEDULE CHANGE DATE. GET
                 C LENGTH FROM 'B' FIELD & RATIONALIZE J
                 C
 0042               10 J = ACTIVE (X) - 1000
 0043                  LEN = LENB (J)
                 C
                 C
                 C CALCULATE FAILURES - FAILURE RATE FROM REGRESSION CONSTANTS
                 C NOTE - J POINTS TO COURSE MATRIX, X POINTS TO ACTIVE MATRIX
                 C
 0044               20 CONTINUE
 0045                  TEM = FAIL (J) * ACTUTL (X)
 0046                  TFAIL (Q, J) = TFAIL (Q, J) + TEM
                 C
                 C CALCULATE NON-ACADEMIC DISENROLLMENT - RATE FROM DATA BASE
                 C
 0047                  TEM1 = NADIS (J) * ACTUTL (X)
 0048                  TNADIS (Q, J) = TNADIS (Q, J) + TEM1
                 C
                 C TEST FOR SETBACK POSSIBILITY
                 C CRITERIA FOR SETBACK: COURSE GT 2 WEEKS, MULTIPLE CONVENINGS, FAILURE
                 C RATE TO PRODUCE SETBACKS.
                 C
 0049                  IF (LEN .LT. 2.) GO TO 100
 0050                  IF (CNSRUN (J) .LT. 2) GO TO 100
 0051                  TEM2 = TEM * SETBAK + .5
 0052                  IF (TEM2 .LT. 1.) GO TO 100
                 C
                 C HERE IF SETBACKS MAY OCCUR
                 C
 0053                  GO TO 200
                 C
                 C TOTAL COURSE AND CLOSEOUT ACTIVE MATRIX FOR COURSE
                 C
 0054              100 ACTIVE (X) = 0
                 C
                 C CALCULATE TOTAL STUDENT DAYS FOR AOB CALCULATION.
                 C ACTNEG CONTAINS DAYS CHARGED TO OTHER QUARTER OR OTHER CONVENINGS.
                 C
                 C TEST WHICH METHOD OF AOB CALCULATION TO BE USED.
 0055                  IF (AOBCON .GT. 300) GO TO 430
                 C
                 C HERE IF CLASS DAYS METHOD TO BE USED
 0056                  TSDAYS (Q, J) = TSDAYS (Q, J) + (LEN * 5. * ACTUTL (X))
                      1 - ACTNEG (X)
 0057                  GO TO 440
                 C
```

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FORTRAN IV G LEVEL  21                CRSEND              DATE = 74265          22/44/14              PAGE 0003

                  C HERE IF YEARLY METHOD TO BE USED.
                  C
   0058             430 ITEM1 = LEN - 1
   0059                 TEM = (ITEM1 * 2) + (LEN * 3.)
   0060                 TSDAYS (G, J) = TSDAYS (G, J) + TEM * ACTUTL (X) - ACTNEG (X)
   0061             440 CONTINUE
                  C
                  C CLOSE OUT COURSE, RESET ACTIVE & RUN FLAGS.
                  C
   0062                 ACTIVE (X) = 0
   0063                 CRSRUN (J) = CRSRUN (J) - 1
   0064                 IF (CRSRUN (J) .LT. 0) CRSRUN (J) = 0
   0065                 GO TO 999
                  C
                  C
                  C ******************** SETBACK ROUTINE ********************
                  C HAVE SETBACKS - SEARCH OUT PROPER CONVENING TO SET BACK TO.
                  C
                  C INIT TEST VALUES
   0066             200 ITEM5 = 1
   0067                 ITEM = ACTIVE (X)
   0068                 TEM5 = 999.
   0069                 ITEM2 = 0
   0070                 ITEM3 = 0
                  C
                  C TEST IF COURSE HAS A SCHEDULE CHANGE-GO THRU LOOP ONCE IF NONE.
                  C
   0071                 IF (CHGWK (J)) 110, 110, 101
                  C
                  C COURSE HAS A SCHED CHANGE-GO THRU LOOP ONLY ONCE IF IT HAS PASSED.
   0072             101 IF (ITEM .LT. 1000) ITEM5 = 2
                  C
   0073             110 DO 120 I1 = 1, ITEM5
   0074                 DO 119 I2 = 1, 300
   0075                 ITEM1 = ACTIVE (I2)
   0076                 IF (ITEM1) 119, 119, 111
                  C
                  C COURSE ACTIVE-TEST IF OUR COURSE.
                  C
   0077             111 IF (ITEM1 .NE. ITEM) GO TO 119
                  C
                  C SKIP IF THE CONVENING WE FOUND IS THE ONE WE ARE NOW ENDING.
   0078                 IF (I2 .EQ. X) GO TO 118
                  C
                  C FOUND ONE OF OUR COURSES-TEST IF EARLIEST CONVENING.
                  C
   0079                 IF (ACTCTR (I2) .GT. TEM5) GO TO 118
                  C
                  C EARLIEST SO FAR, SAVE WEEKS & POSITION
                  C
   0080             112 TEM5 = ACTCTR (I2)
   0081                 ITEM3 = I2
                  C
                  C SEE IF WE FOUND ALL CONVENINGS, BUMP COUNTER & TEST.
                  C
   0082             118 ITEM2 = ITEM2 + 1
   0083                 IF (ITEM2 .EQ. CRSRUN (J)) GO TO 121
   0084             119 CONTINUE
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FORTRAN IV G LEVEL  21              CASE.D              DATE = 74265          22/44/14              PAGE 0004
                C
                C CHANGE DATE IN PROGRESS. TEST NUMBERS GT 1000 IF HAVN'T FOUND ALL YET.
                C
 0085                 ITEM = ITEM + 1000
 0086             120 CONTINUE
                C
                C HERE IF DONE COURSE SEARCH OF ACTIVE MATRIX. ITEM3 IS 0 IF NO HIT.
                C
 0087             121 IF (ITEM3) 100, 100, 122
                C
                C FIND COURSE AND MODIFY TABLES TO REPRESENT SETBACKS
                C
 0088             122 ITEM = ACTIVE (ITEM3)
 0089                 IF (ITEM .LT. 1000) GO TO 123
 0090                 ITEM = ITEM - 1000
 0091                 TEM4 = LENB (ITEM)
 0092                 GO TO 124
 0093             123 TEM4 = LENA (ITEM)
 0094             124 CONTINUE
 0095                 ITEM2 = TEM2
 0096                 ACTUTL (ITEM3) = ACTUTL (ITEM3) + ITEM2
 0097                 TSETBK (Q, ITEM) = TSETBK (Q, ITEM) + ITEM2
                C
                C
                C NOW CALCULATE NEGATIVE STUDENT DAYS - TO COMPENSATE COURSE STUD LEFT.
                C ITEM2 IS SETBACKS, LEN IS FIRST COURSE LENGTH, TEM4 IS SET BACK TO CRS
                C LENGTH, TEM5 IS WKS LEFT IN SET BACK TO COURSE.
                C
                C NOW LET TEM5 EQUAL WEEKS STUDENT HAS BEEN IN SET BACK TO COURSE.
 0098                 TEM5 = TEM4 - TEM5
                C
                C TEST AOB MULT FOR METHOD OF AOB CALCULATION.
 0099                 IF (AOBCON .GT. 300) GO TO 130
                C
                C AOBCON LT 300, USE STUDENT DAYS METHOD.
 0100                 ACTNEG (X) = ACTNEG (X) + (TEM5 * 5. * TEM2)
 0101                 GO TO 100
                C
                C YEARLY AOB METHOD USED - CONVERT WEEKS TO INTEGER.
                C STUDENT BEGINS SETBACK TO CLASS MONDAY, WEEKEND CHARGED TO OLD COURSE
                C CALC TOTAL STUD DAYS, INCLUDING WEEKENDS - DUMMY IS INTEGER.
                C
 0102             130 DUMMY = TEM5
 0103                 TEM5 = (DUMMY * 2) +(TEM5 * 5.)
 0104                 ACTNEG (X) = ACTNEG (X) + TEM5 * TEM2
 0105                 GO TO 100
                C
                C
 0106             999 CONTINUE
                C
                C//////////////////////////////////////////////////////////////////////////
                C
 0107                 IF (ENDFLG) 1010, 1010, 1001
 0108            1001 WRITE (6, 1002) COP (J), ACTUTL (X), LEN, J, X
 0109            1002 FORMAT (' CRS END- COP= ', A4, ';  STUDENTS= ', I3, ';  LENGTH='
                     1,F5.1,';  CRS SEQ=',I4,';  RUN POSITN=', I4)
                C
 0110                 IF (ITEM2 .GT. 0) WRITE (6, 1005) ITEM2, ITEM3
```

```
FORTRAN IV G LEVEL  21                CASEND             DATE = 74265          22/44/16             PAGE 0005

 0111           1005 FORMAT (' ', F10.5, I2, ' STORES SET TO CRS ', I4)
 0112           1010 CONTINUE
                C
                C//////////////////////////////////////////////////////////////////////////
                C
 0113                 RETURN
 0114                 END
```

```
FORTRAN IV G LEVEL  21                 MAIN               DATE = 74265          22/44/14              PAGE 0001

0001                SUBROUTINE QRTEND (X)
              C
              C QUARTER END ROUTINE TOTALS STUDENT DAYS OF ALL CONVENINGS IN SESSION,
              C AND ADDS THEM TO COURSE TOTALS.  THESE DAYS ARE ALSO ENTERED AS
              C 'NEGATIVE' DAYS IN ACTIVE MATRIX TO PREVENT THEM FROM BEING COUNTED IN
              C  NEXT QUARTERS TOTALS.
              C ROUTINE CHECKS ADBCON FOR WHICH METHOD OF TOTALLING ADB IS USED.
              C
              C
              C
0002                IMPLICIT INTEGER*2 (A-Z,$)
0003                REAL*4 BKLGPL
0004                REAL*4 NOSHPL, BPOOL, NADIS, FAIL
0005                REAL*4 ACTCTR, TFAIL, TNADIS
0006                REAL*4 LEN, LENA, LENB
0007                REAL*4 TEM, TEM1, TEM2, TEM3, TEM4, TEM5
0008                REAL*4 NOSHOW
0009                REAL*8 SCHOOL
0010                INTEGER*4 WHERE
0011                INTEGER*4 CDP, JNO
0012                INTEGER*4 NEC
0013                INTEGER*4 TSDAYS
0014                INTEGER*4 ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
0015                INTEGER*4 TCAP, TUTIL, TPASS
              C
              C COMMON DATA FOR CLASS DATA MATRIX
              C
0016                COMMON CDP (200), SCHOOL (200), CRSRUN (200), CONVA (200)
0017                COMMON LENA (200), CAPA (200), BCAPA (200), OFFSET (200)
0018                COMMON CHGWK (200), CONVB (200), LENB (200), CAPB (200)
0019                COMMON RCAPB (200), NEC (200), BAKLOG (200), NOSHOW (200)
0020                COMMON BKLGPL (200), NOSHPL (200), DEMAND (200), BDMAND (200)
0021                COMMON BPOOL (200), FAIL (200), NADIS (200), JNO (200)
              C
              C QUARTERLY AND ANNUAL COURSE TOTALS ACCUMULATION
              C
0022                COMMON TCAP (5, 200), TUTIL (5, 200), TSETBK (5, 200)
0023                COMMON TSDAYS (5, 200), TFAIL (5, 200), TNOSHO (5, 200)
0024                COMMON TNADIS (5, 200), TBKLOG (5, 200), TCONV (5, 200)
              C
              C COMMON FOR COMMUNICATION BETWEEN SUBROUTINES
              C
0025                COMMON DUMMY
0026                COMMON CONV, LEN, CAP, RCAP, LAST, COURSE
0027                COMMON TEM, TEM1, TEM2, TEM3, TEM4, TEM5
0028                COMMON ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
0029                COMMON YEAR, CRSES, Q, W
0030                COMMON WKOFF, INIT, WHERE
0031                COMMON NEGFLG, ADBCON
0032                COMMON TRACEF, RLSFLG, ENDFLG, PREFLG, YRFLG, YEARUN
              C
              C COMMON FOR COURSE ACTIVE MATRIX ELEMENTS
              C
0033                COMMON ACTIVE (300), ACTCTR (300), ACTUTL (300), ACTNEG (300)
              C
              C
              C
              C TEST ACTIVE MATRIX FOR ACTIVE COURSES.
```

```
FORTRAN IV G LEVEL  21              QTREND           DATE = 74265        22/44/14             PAGE 0002

                 C
 0034                  DO 500 J = 1, 300
 0035                  IF (ACTIVE (J)) 500, 500, 401
                 C
                 C ACTIVE FILE HAS A COURSE ACTIVE AT "J".
                 C GET POINTER INTO COURSE MATRIX.
 0036               401 ITEM = ACTIVE (J)
                 C
                 C TEST IF GT 1000 (RELEASED AFTER CHANGE DATE).
 0037                  IF (ITEM .GT. 1000) GO TO 410
                 C
                 C HERE IF LT 1000 (BEFORE CHANGE DATE)
 0038                  LEN = LENA (ITEM)
 0039                  GO TO 420
                 C
                 C HERE IF RELEASED AFTER CHANGE DATE, SUBTRACT 1000 & GET LENGTH.
 0040               410 ITEM = ITEM - 1000
 0041                  LEN = LENB (ITEM)
 0042               420 CONTINUE
                 C
                 C TEST WHICH METHOD OF ADB CALCULATION TO BE USED.
 0043                  IF (ADBCON .GT. 500) GO TO 430
                 C
                 C C HERE IF CLASS DAYS METHOD TO BE USED.
 0044                  TEM = (LEN - ACTCTR (J)) * ACTUTL (J)
 0045                  TEM = TEM* 5.
 0046                  GO TO 440
                 C
                 C HERE IF YEARLY ADB METHOD TO BE USED
                 C CHARGE THIS WEEKEND TO THE COURSE BEING CLOSED OUT
                 C
 0047               430 TEM1 = LEN - ACTCTR (J)
 0048                  ITEM1 = TEM1
 0049                  TEM = ((ITEM1 * 2) + (ITEM1 * 5))
 0050                  TEM = TEM * ACTUTL (J)
 0051               440 CONTINUE
                 C
                 C ADD TOTAL STUDENT DAYS TO COURSE & ACTIVE MATRICES
 0052                  ACTWEG (J) = ACTWEG (J) + TEM
 0053                  TSDAYS (Q, ITEM) = TSDAYS (Q, ITEM) + TEM
 0054               500 CONTINUE
                 C
                 C
                 C COPY CURRENT BACKLOG POOL FIGURES INTO COURSE TOTALS
                 C
 0055                  DO 8111 I = 1, CASES
 0056                  TBKLOG (Q,I) = BKLGPL (I)
 0057              8111 CONTINUE
                 C
                 C//////////////////////////////////////////////////////////////////////////////
 0058                  WRITE (6,1000) K
 0059              1000 FORMAT (' QUARTER END ROUTINE FOR QUARTER ', I1)
                 C//////////////////////////////////////////////////////////////////////////////
                 C
 0060                  RETURN
 0061                  END
```

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FORTRAN IV G LEVEL  21            [illegible]            DATE = 76265        22/44/16            PAGE 0001

0001                SUBROUTINE [illegible]
              C
              C THIS SUBROUTINE PROVIDES A SHORT FORM PRINTOUT OF ALL COURSE DATA AT A
              C RATE OF 4 COURSES PER PAGE.  IT IS USEFUL WHEN A LARGE NUMBER OF RUNS
              C ARE TO BE MADE OR A FORMAL PRINTOUT IS NOT REQUIRED.  THE YEAR FLAG
              C MUST BE 2 TO CALL THIS PRINTOUT (AS A PROJECTION AS THE FORMAL ONE IS
              C SUPPRESSED). THIS SUBROUTINE CALLS WPRINT FOR THE NORMAL PRINTOUT IF THE
              C FLAG IS 1 OR LESS.
              C
0002                IMPLICIT INTEGER*2 (A-Z,$)
0003                REAL*4 BALCPL
0004                REAL*4 NOSHPL, BPUCL, TADIS, FAIL
0005                REAL*4 ACTCF, TFAIL, TNADIS
0006                REAL*4 LEN, LENA, LENB
0007                REAL*4 TEM, TEM1, TEM2, TEM3, TEM4, TEM5
0008                REAL*4 NOSHOW
0009                REAL*4 SCHOOL
0010                INTEGER*4 [illegible]
0011                INTEGER*4 CONV, AND
0012                INTEGER*4 AL
0013                INTEGER*4 TSLOTS
0014                INTEGER*4 ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
0015                INTEGER*4 TCAP, TOTIL, TPASS
              C
              C###########################################################################
0016                INTEGER*4 CANDZ
0017                DIMENSION CANDZ (10)
              C###########################################################################
              C
              C COMMON DATA FOR CLASS DATA MATRIX
              C
0018                COMMON CDP (200), SCHOOL (200), CASNUM (200), CONVA (200)
0019                COMMON LENA (200), CAPA (200), BCAPA (200), OFFSET (200)
0020                COMMON CHGAR (200), CONVB (200), LENB (200), CAPB (200)
0021                COMMON BCAPB (200), WEC (200), BARLOG (200), NOSHOW (200)
0022                COMMON BALCPL (200), NOSHPL (200), DEMAND (200), BDMAND (200)
0023                COMMON BPDUL (200), FAIL (200), NADIS (200), AND (200)
              C
              C QUARTERLY AND ANNUAL COURSE TOTALS ACCUMULATION
              C
0024                COMMON TCAP (5, 200), TOTIL (5, 200), TSETRA (5, 200)
0025                COMMON TSLOTS (5, 200), TFAIL (5, 200), TNOSHO (5, 200)
0026                COMMON TNADIS (5, 200), TBALOG (5, 200), TCONV (5, 200)
              C
              C COMMON FOR COMMUNICATION BETWEEN SUBROUTINES
              C
0027                COMMON DUMMY
0028                COMMON CONV, LEN, CAP, BCAP, LAST, COURSE
0029                COMMON TEM, TEM1, TEM2, TEM3, TEM4, TEM5
0030                COMMON ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
0031                COMMON YEAR, CASES, Q, W
0032                COMMON WDIFF, INST, WHERE
0033                COMMON NEGFLG, [illegible]
0034                COMMON TRACEF, RESFLG, CAPFLG, PROFLG, YRFLG, YEARUM
              C
              C COMMON FOR COURSE ACTIVE MATRIX ELEMENTS
              C
```

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FORTRAN IV G LEVEL  21                , YEARNO              DATE = 74265         22/44/14                PAGE 0002

 0035                 COMMON ACTIVE (300), ACTCTR (300), ACTUTL (300), ACTNEG (300)
                C
                C/////////////////////////////////////////////////////////////////////
                C TRACE PRINT ROUTINE - PRINT ONLY IF PROPER TRACE FLAG IS SET
                C
                C TRACE (SHORT FORM) COURSE DATA PRINT ROUTINE
                C CALLED ONLY IF PARAMETER CARD FLAG 2 OR GREATER
                C
 0036                 IF (YRFLG .LE. 1) CALL NPRINT
 0037                 IF (YRFLG .LE. 1) GO TO 801
                C
 0038                 PAGER = 9
                C
 0039                 DO 800 I = 1, CRSES
                C
 0040                 IF (PAGER .LT. 9) GO TO 693
                C
 0041                 WRITE (6, 555) YEAR
 0042             555 FORMAT (1H1, T44, '********* ',I4, ' TPF MODEL TRACE RUN COURSE LIS
                     1T ********')
                C
 0043                 WRITE (6, 557)
 0044                 WRITE (6, 556)
 0045             556 FORMAT ('0 COP CNVA LENA CAPA BCPA FSET WCHG CNVB LENB CAPB BCPB',
                     1 ' BKLG DMAND BDMND',
                     2 T79, 'TCONV  TCAP TUTIL TNSHO TSDAY BKLOG TFAIL TNADS SETBK')
                C
 0046                 PAGER = 0
 0047             693 CONTINUE
                C
 0048                 READ (WHERE, 601, END = 602) (CARD2 (AA), AA = 1, 18)
 0049             601 FORMAT (10X, 2A4, A2, 15A4)
                C
 0050                 WRITE (6, 603) JNO (I), (CARD2 (AA), AA = 4, 17), SCHOOL (I),
                     1 CARD2 (1), CARD2 (2), CARD2 (3)
 0051             603 FORMAT ('0', A4, 1X, 14A4, 1X, A6, 1X, 2A4, A2)
 0052             602 CONTINUE
                C
 0053                 WRITE (6, 557) COP (I), CONVA (I), LENA (I), CAPA (I), BCAPA (I),
                     1 OFFSET (I), CHGWK (I), CONVB (I), LENB (I), CAPB (I), BCAPB (I)
                     2, BAKLOG (I), DEMAND (I), BDMAND (I)
                C
 0054             557 FORMAT (1H , A4, I5, F5.1, 5I5, F5.1, 3I5, 2I6)
                C
 0055                 DO 560 L = 1, 4
                C
 0056                 ITEM1 = TFAIL (L, I)
 0057                 ITEM2 = TNADIS (L, I)
 0058                 WRITE (6, 558) TCONV (L, I), TCAP (L, I), TUTIL (L, I),
                     1 TNOSHO (L, I), TSDAYS (L, I), TBKLOG(L, I), ITEM1,
                     2 ITEM2, TSETBK (L, I)
                C
 0059             558 FORMAT (1H+, T78, 9I6)
                C
 0060                 WRITE (6, 559)
 0061             559 FORMAT (' ')
                C
 0062             560 CONTINUE
```

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FORTRAN IV G LEVEL  21              YEAREND           DATE = 74265         22/44/14              PAGE 0003

 0063              PAGER = PAGER + 1
 0064          800 CONTINUE
              C//////////////////////////////////////////////////////////////////////////////
              C
 0065          801 CONTINUE
 0066              WRITE (6, 561)
 0067          561 FORMAT ('1')
 0068              REWIND 11
 0069              YEAR = YEAR + 1
 0070              RETURN
 0071              END
```

```
FORTRAN IV G LEVEL  21              MAIN              DATE = 74265        22/44/14             PAGE 0001

 0001              SUBROUTINE PRERUN (X)
             C
 0002              IMPLICIT INTEGER*2 (A-Z,$)
 0003              REAL*4 BKLGPL
 0004              REAL*4 NOSHPL, BPOOL, NADIS, FAIL
 0005              REAL*4 ACTCTR, TFAIL, TNADIS
 0006              REAL*4 LEN, LENA, LENB
 0007              REAL*4 TEM, TEM1, TEM2, TEM3, TEM4, TEM5
 0008              REAL*4 NOSHOW
 0009              REAL*8 SCHOOL
 0010              INTEGER*4 WHERE
 0011              INTEGER*4 CDP, JNO
 0012              INTEGER*4 NEL
 0013              INTEGER*4 TSDAYS
 0014              INTEGER*4 ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
 0015              INTEGER*4 TCAP, TUTIL, TPASS
             C
             C COMMON DATA FOR CLASS DATA MATRIX
             C
 0016              COMMON CDP (200), SCHOOL (200), CRSRUN (200), CONVA (200)
 0017              COMMON LENA (200), CAPA (200), BCAPA (200), OFFSET (200)
 0018              COMMON CHGWK (200), CONVB (200), LENB (200), CAPB (200)
 0019              COMMON BCAPB (200), NEC (200), BAKLOG (200), NOSHOW (200)
 0020              COMMON BKLGPL (200), NOSHPL (200), DEMAND (200), BDMAND (200)
 0021              COMMON BPOOL (200), FAIL (200), NADIS (200), JNO (200)
             C
             C QUARTERLY AND ANNUAL COURSE TOTALS ACCUMULATION
             C
 0022              COMMON TCAP (5, 200), TUTIL (5, 200), TSETBK (5, 200)
 0023              COMMON TSDAYS (5, 200), TFAIL (5, 200), TNOSHO (5, 200)
 0024              COMMON TNADIS (5, 200), TBKLOG (5, 200), TCONV (5, 200)
             C
             C COMMON FOR COMMUNICATION BETWEEN SUBROUTINES
             C
 0025              COMMON DUMMY
 0026              COMMON CONV, LEN, CAP, BCAP, LAST, COURSE
 0027              COMMON TEM, TEM1, TEM2, TEM3, TEM4, TEM5
 0028              COMMON ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
 0029              COMMON YEAR, CRSES, Q, W
 0030              COMMON WKOFF, INIT, WHERE
 0031              COMMON NEGFLG, AOBCON
 0032              COMMON TRACEF, RLSFLG, ENDFLG, PREFLG, YRFLG, YEARUN
             C
             C COMMON FOR COURSE ACTIVE MATRIX ELEMENTS
             C
 0033              COMMON ACTIVE (300), ACTCTR (300), ACTUTL (300), ACTNEG (300)
             C
             C THIS SUBROUTINE HANDLES THE UNIQUE SITUATION WHERE A NEGATIVE OFFSET
             C HAS BEEN SPECIFIED TO START A COURSE PRIOR TO THE START OF A MODEL RUN
             C THIS SITUATION EXISTS FOR COURSES OF RELATIVELY LONG DURATION, AND
             C RELATIVELY FEW CONVENINGS. IT IS USEFUL TO INDICATE TRUE AOB DURING
             C A QUARTER.
             C
             C A CODE OF 1 IS IN (X) IF CALLED BY COURSE RELEASE, 2 IF CALLED BY END.
             C
 0034              ABC = X
 0035              DUMMY = 0
```

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FORTRAN IV G LEVEL  21                    PRERUN              DATE = 74265         22/44/14              PAGE 0002
 0036                 IF (NEGFLG .GT. 1) GO TO 1000
                C
                C CALLED BY RELEASE. TEST IF COURSE SHOULD BE RELEASED. CRITERIA IS THAT
                C COURSE LENGTH IS SUCH THAT COURSE WILL STILL BE RUNNING AT MODEL START
                C TEST INIT TO SEE IF GENERAL PRERUN OR NEG OFFSET PRERUN
                C
 0037                 IF (INIT) 101, 101, 102
                C
 0038             101 IF (WKOFF .GE. 0) GO TO 1999
 0039             102 IF (LEN .LE. (13. - W + 1))GO TO 1999
                C
                C COURSE SHOULD BE RELEASED - SET DUMMY TO 1 FOR RETURN.
 0040                 DUMMY = 1
                C
                C MODIFY LENGTH TO REFLECT WEEKS REMAINING IN 1ST QUARTER OF COURSE.
 0041                 LEN = LEN - (13. - W + 1)
                C
                C/////////////////////////////////////////////////////////////////////
                C TRACE PRINT ROUTINE - PRINT ONLY IF PROPER TRACE FLAG IS SET
                C
 0042                 IF (PREFLG) 3010, 3010, 3001
 0043            3001  WRITE (6, 3000) CDP (COURSE), COURSE, WKOFF, LEN
 0044            3000 FORMAT (' PRERUN CALLED - CDP = ', A4, '  POSITION =', I5,
                     1 '  OFFSET =', I4, '  LENGTH IN 1ST QTR =', F4.1)
 0045            3010 CONTINUE
                C
                C/////////////////////////////////////////////////////////////////////
                C
 0046                 GO TO 1999
                C
                C
                C
                C HERE IF PRERUN CLOSEOUT ROUTINE
                C
 0047            1000 CONTINUE
                C
 0048                 DO 500 J = 1, 300
 0049                 IF (ACTIVE (J)) 500, 500, 401
                C
                C ACTIVE FILE HAS A COURSE ACTIVE AT 'J'.
                C GET COURSE POINTER INTO COURSE MATRIX, SUBTRACT 1000 IF GT 1000
                C
 0050             401 ITEM = ACTIVE (J)
 0051                 IF (ITEM .GT. 1000) ITEM = ITEM - 1000
                C
                C FIND LENGTH FOR NEGDAYS CALCULATION.
                C ACTCTR CONTAINS NUMBER OF WEEKS REMAINING TILL CLOSEOUT OF COURSE.
                C
 0052                 LEN = LENA (ITEM) - ACTCTR (J)
                C
                C/////////////////////////////////////////////////////////////////////
                C TRACE PRINT ROUTINE - PRINT ONLY IF PROPER TRACE FLAG IS SET
 0053                 IF (PREFLG .GT. 0)
                     1WRITE (6, 4356) CDP (ITEM), ACTCTR (J), LEN
 0054            4356 FORMAT (' PRESTART CLOSEOUT  CDP =', A4, 3X, 'ACTCTR = ', F5.1,
                     1 '   NEGLEN = ', F5.1)
                C/////////////////////////////////////////////////////////////////////
                C
```

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```
FORTRAN IV G LEVEL  21                PRERUN            DATE = 74265         22/44/14              PAGE 0003

                 C TEST AOB CONSTANT FOR WHICH METHOD OF CALC STUDENT DAYS
 0055                  IF (AOBCON .GT. 300) GO TO 450
                 C
                 C HERE IF CLASS DAYS METHOD USED TO CALCULATE AOB.
                 C
 0056                  ACTNEG (J) = LEN * ACTUTL (J)
                      1 * 5.
 0057                  GO TO 500
                 C
                 C HERE IF CALANDER DAYS METHOD USED FOR AOB CALCULATION.
                 C
 0058              450 ITEM1 = LEN - 1
 0059                  TEM = (ITEM1 * 2) + (LEN * 5.)
 0060                  ACTNEG (J) = TEM * ACTUTL (J)
                 C
 0061              500 CONTINUE
                 C HERE IF NO MORE ACTIVE COURSES - EXIT SUBROUTINE
                 C
 0062                  NEGFLG = 0
                 C
 0063             1999 CONTINUE
                 C
 0064                  RETURN
 0065                  END
```

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FORTRAN IV G LEVEL  21                MAIN                DATE = 74265          22/44/14              PAGE 0001

 0001                 SUBROUTINE NPRINT
                C
 0002                 IMPLICIT INTEGER*2 (A-Z,$)
                C
 0003                 REAL*4 ADM
 0004                 INTEGER*4 CRSNAM
 0005                 INTEGER*4 IFAIL, INADIS
 0006                 INTEGER*4 SUTIL, CUTIL, SCAP, CCAP, SSDAYS, CSDAYS
 0007                 REAL*4 PCTUTL
 0008                 REAL*4 PCTNSH, PCTPAS, PCTFL, PCTSB, PCTNOS
 0009                 REAL*8 CTLG1, CTLG2
                C
 0010                 REAL*4 BKLGPL
 0011                 REAL*4 NOSHPL, BPOOL, NADIS, FAIL
 0012                 REAL*4 ACTCTR, TFAIL, TNADIS
 0013                 REAL*4 LEN, LENA, LENB
 0014                 REAL*4 TEM, TEM1, TEM2, TEM3, TEM4, TEM5
 0015                 REAL*4 NOSHOW
 0016                 REAL*8 SCHOOL
 0017                 INTEGER*4 WHERE
 0018                 INTEGER*4 COP, JNO
 0019                 INTEGER*4 NEC
 0020                 INTEGER*4 TSDAYS
 0021                 INTEGER*4 ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
 0022                 INTEGER*4 TCAP, TUTIL, TPASS
                C
                C COMMON DATA FOR CLASS DATA MATRIX
                C
 0023                 COMMON COP (200), SCHOOL (200), CRSRUN (200), CONVA (200)
 0024                 COMMON LENA (200), CAPA (200), BCAPA (200), OFFSET (200)
 0025                 COMMON CHGWK (200), CONVB (200), LENB (200), CAPB (200)
 0026                 COMMON BCAPB (200), NEC (200), BAKLOG (200), NOSHOW (200)
 0027                 COMMON BKLGPL (200), NOSHPL (200), DEMAND (200), BDMAND (200)
 0028                 COMMON BPOOL (200), FAIL (200), NADIS (200), JNO (200)
                C
                C QUARTERLY AND ANNUAL COURSE TOTALS ACCUMULATION
                C
 0029                 COMMON TCAP (5, 200), TUTIL (5, 200), TSETBK (5, 200)
 0030                 COMMON TSDAYS (5, 200), TFAIL (5, 200), TNOSHO (5, 200)
 0031                 COMMON TNADIS (5, 200), TBKLOG (5, 200), TCONV (5, 200)
                C
                C COMMON FOR COMMUNICATION BETWEEN SUBROUTINES
                C
 0032                 COMMON DUMMY
 0033                 COMMON CONV, LEN, CAP, BCAP, LAST, COURSE
 0034                 COMMON TEM, TEM1, TEM2, TEM3, TEM4, TEM5
 0035                 COMMON ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
 0036                 COMMON YEAR, CRSES, Q, W
 0037                 COMMON WKOFF, INIT, WHERE
 0038                 COMMON NEGFLG, ADBCON
 0039                 COMMON TRACEF, RLSFLG, ENDFLG, PREFLG, YRFLG, YEARUN
                C
                C COMMON FOR COURSE ACTIVE MATRIX ELEMENTS
                C
 0040                 COMMON ACTIVE (300), ACTCTR (300), ACTUTL (300), ACTNEG (300)
                C
                C
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FORTRAN IV G LEVEL  21                 NPRINT            DATE = 74265          22/44/14            PAGE 0002

                C DIMENSION STATEMENTS UNIQUE TO THIS SUBROUTINE ONLY
                C
                C
 0041                 DIMENSION  SUTIL (5), SCAP (5), SSETBK (5), SSDAYS (5), SNOSHO (5)
 0042                 DIMENSION  CUTIL (5), CCAP (5), CSETBK (5), CSDAYS (5), CNOSHO (5)
 0043                 DIMENSION SCONV (5), SFAIL (5), SNADIS (5)
 0044                 DIMENSION CCONV (5), CFAIL (5), CNADIS (5)
                C
 0045                 DIMENSION CRSNAM (15), PCTUTL (5), PCTNSH (5), BKL (5)
 0046                 DIMENSION ADM (5), PASS (5), PCTPAS  (5),PCTFL (5), PCTSB (5)
 0047                 DIMENSION INADIS (5), IFAIL (5)
 0048                 DIMENSION PCTNDS (5)
                C SUBROUTINE TO PRINT COURSE, SCHOOL, AND CENTER TOTALS
                C THIS SUBROUTINE PRINTS FORMATTED OUTPUT AT A RATE OF 3 COURSES PER
                C PAGE.  IT ALSO PRINTS TOTALS FOR A SCHOOL WHENEVER A NEW SCHOOL CODE
                C IS ENCOUNTERED IN THE DATA STREAM.  IT ALSO PRINTS CENTER TOTALS AT
                C THE END OF A YEAR.  SEPARATE OUTPUT FORMATS ARE PROVIDED FOR EACH YEAR
                C WHENEVER THE MODEL INVOLVES MULTIPLE YEAR-RUNS.
                C
                C INIT & CLAMP RUN CONSTANTS
 0049                 ITEMS = 0
 0050                 IF (AOBCON .LE. 0) AOBCON = 250
 0051                 PAGE = 1
 0052                 PAGER = 4
 0053                 YEAR2U = YEAR - 1900
                C
                C INITIALIZE CENTER TOTALS
                C
 0054                 DO 1 Q = 1, 5
 0055                 CUTIL (Q) = 0
 0056                 CCAP  (Q) = 0
 0057                 CSETBK (Q) = 0
 0058                 CSDAYS (Q) = 0
 0059                 CNOSHO (Q) = 0
 0060                 CCONV  (Q) = 0
 0061                 CFAIL  (Q) = 0
 0062                 CNADIS (Q) = 0
                C
 0063                 SUTIL (Q) = 0
 0064                 SCAP  (Q) = 0
 0065                 SSETBK(Q) = 0
 0066                 SSDAYS(Q) = 0
 0067                 SNOSHO(Q) = 0
 0068                 SCONV (Q) = 0
 0069                 SFAIL (Q) = 0
 0070                 SNADIS(Q) = 0
                C
 0071               1 CONTINUE
                C
                C
                C
                C LOOP THROUGH PRINT ROUTINE FOR EACH COURSE
 0072                 DO 4444 I = 1, CRSES
                C
                C TEST FOR SCHOOL CODE CHANGE
                C DONT PRINT SCHOOL SUMMARY IF THIS IS FIRST PASS
                C
 0073                 IF (I .EQ. 1) GO TO 4
```

```
FORTRAN IV G LEVEL  21              NPRINT            DATE = 74265          22/44/14              PAGE 0003

 0074              IF (SCHOOL (I) .EQ. SCHOOL (I-1)) GO TO 4
 0075              GO TO 500
 0076          500 CONTINUE
 0077            4 CONTINUE
 0078              ITEMS = ITEMS + 1
             C
             C USE 5TH POSITION IN TOTALS MATRIX TO AGGREGATE TOTALS - INIT TO ZERO
 0079              TUTIL (5, I) = 0
 0080              TCAP (5, I) = 0
 0081              TSETBK (5, I) = 0
 0082              TSDAYS (5, I) = 0
 0083              TNOSHO (5, I) = 0
 0084              TCONV (5, I) = 0
             C
             C INIT INTEGER FAIL & NON-ACADEMIC DROPOUT TOTALS TO ZERO
             C
 0085              IFAIL (5) = 0
 0086              INADIS (5) = 0
             C
             C
             C NOW TOTAL ANNUAL FIGURES
             C
 0087              DO 5 Q = 1, 4
             C
 0088              TUTIL(5,I) = TUTIL(5,I) + TUTIL(Q,I)
 0089              TCAP(5,I) = TCAP(5,I) + TCAP(Q,I)
 0090              TSETBK(5,I) = TSETBK(5,I) + TSETBK(Q,I)
 0091              TSDAYS(5,I) = TSDAYS(5,I) + TSDAYS(Q,I)
 0092              TNOSHO (5, I) = TNOSHO (5, I) + TNOSHO (Q, I)
 0093              TCONV(5,I) = TCONV(5,I) + TCONV(Q,I)
             C
             C CONVERT TO INTEGER, ROUND, & TOTAL FAILURES & NON-ACADEMIC DISENROLLS
             C
 0094              IFAIL (Q) = 0
 0095              IFAIL (Q) = IFAIL (Q, I) + .5
 0096              IFAIL (5) = IFAIL (5) + IFAIL (Q)
             C
 0097              INADIS (Q) = 0
 0098              INADIS (Q) = TNADIS (Q, I) + .5
 0099              INADIS (5) = INADIS (5) + INADIS (Q)
             C
             C TOTAL DATA FOR INDIVIDUAL SCHOOL TOTALS
             C
 0100              SUTIL (Q) = SUTIL (Q) + TUTIL (Q, I)
 0101              SCAP (Q) = SCAP (Q) + TCAP (Q, I)
 0102              SSETBK (Q) = SSETBK (Q) + TSETBK (Q, I)
 0103              SSDAYS (Q) = SSDAYS (Q) + TSDAYS (Q, I)
 0104              SNOSHO (Q) = SNOSHO (Q) + TNOSHO (Q, I)
 0105              SCONV (Q) = SCONV (Q) + TCONV (Q, I)
 0106              SFAIL (Q) = SFAIL (Q) + IFAIL (Q)
 0107              SNADIS (Q) = SNADIS (Q) + TNADIS (Q, I)
             C
             C TOTAL DATA FOR FLEET TRAINING CENTER TOTALS
             C
 0108              CUTIL (Q) = CUTIL (Q) + TUTIL (Q, I)
 0109              CCAP (Q) = CCAP (Q) + TCAP (Q, I)
 0110              CSETBK (Q) = CSETBK (Q) + TSETBK (Q, I)
 0111              CSDAYS (Q) = CSDAYS (Q) + TSDAYS (Q, I)
```

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FORTRAN IV G LEVEL  21                UPRINT              DATE = 74265        22/44/14            PAGE 0004
 0112                   CNOSHO (Q) = CNOSHO (Q) + TNOSHO (Q, I)
 0113                   CCONV (Q) = CCONV (Q) + TCONV (Q, I)
 0114                   CFAIL (Q) = CFAIL (Q) + IFAIL (Q)
 0115                   CNADIS (Q) = CNADIS (Q) + TNADIS (Q, I)
              C
 0116               5 CONTINUE
              C
              C
              C NOW CALCULATE TOTALS & PERCENTAGES
              C
              C ASSUME CHANGE WEEK HAS NOT PASSED THIS QUARTER, INIT CAP & CONV TO 'A'
 0117                   CONV = CONVA(I)
 0118                   CAP = CAPA (I) - BCAPA (I)
 0119                   TBKLOG (5, I) = TBKLOG (4, I)
              C
              C NOW CALCULATE UTILIZATIONS & PERCENTAGES
              C
 0120                   DO 20 Q = 1, 5
              C
              C TEST IF THERE IS A CHANGE WEEK
 0121                   IF (CHGWK (I)) 7, 7, 6
              C
              C HERE IF THERE IS A CHANGE WEEK, CHECK IF IT HAS PASSED
 0122                 6 ITEM = 13 + (YEARUN - 1)
 0123                   IF (CHGWK (I) .LT. ITEM) GO TO 7
              C
              C CHANGEWK HAS PASSED - USE 'B' CONVEN & CAPACITY
 0124                   CONV = CONVB(I)
 0125                   CAP = CAPB (I) - BCAPB (I)
              C
 0126                 7 TEM = ADRCON
 0127                   ADB (Q) = TSDAYS (Q, I) / TEM
              C MULTIPLY BY 4 IF QUARTERLY TOTAL
 0128                   IF (Q .LE. 4) ADB (Q) = ADB (Q) * 4.
              C
 0129                   PASS (Q) = TUTIL (Q, I) - IFAIL (Q) - INADIS (Q)
 0130                   IF (PASS (Q)) 8, 9, 9
 0131                 8 PASS (Q) = 0
 0132                 9 CONTINUE
              C
 0133                   BKL (Q) = 0
 0134                   IF (CONV) 12, 12, 10
 0135                10 IF (CAP) 12, 12, 11
 0136                11 TEM = CAP
 0137                   BKL (Q) = (50. / CONV) * (TBKLOG (Q, I) / TEM)
 0138                   IF (BKL (Q) .GT. 30) BKL (Q) = 30
 0139                12 CONTINUE
              C
 0140                   PCTUTL (Q) = 0.
 0141                   TEM = TCAP (Q, I)
 0142                   IF (TCAP (Q, I) .GT. 0)
                      1 PCTUTL (Q) = (TUTIL (Q, I) / TEM) * 100.
              C
              C TEST UTILIZATION TO SEE IF WE CAN CALCULATE PERCENTAGES
 0143                   IF (TUTIL (Q, I)) 13, 13, 14
              C
              C NO UTILIZATION - ZERO PERCENTAGES & EXIT
 0144                13 CONTINUE
```

```
FORTRAN IV G LEVEL  21                  MP=INT             DATE = 74265           22/44/14              PAGE 0005
 0145                 PCTNSH (Q) = 0.
 0146                 PCTPAS (Q) = 0.
 0147                 PCTFL (Q) = 0.
 0148                 PCTSB (Q) = 0.
 0149                 PCTNOS (Q) = 0.
 0150                 GO TO 20
               C
               C HAVE UTILIZATION - CALC %
 0151             14 TEM = TUTIL (Q, I)
 0152                 TEM1 = TNOSHO (Q, I) + TUTIL (Q, I)
 0153                 PCTNSH (Q) = (TNOSHO (Q, I) / TEM1) * 100.
 0154                 PCTPAS (Q) = (PASS (Q) / TEM) * 100.
 0155                 PCTFL (Q) = ((FAIL (Q) / TEM) * 100.
 0156                 PCTSB (Q) = (TSETBK (Q, I) / TEM) * 100.
 0157                 PCTNOS (Q) = ((NAUIS (Q) / TEM) * 100.
               C
 0158             20 CONTINUE
               C
               C
               C
               C
               C
               C CALCULATE SIGNED UP FROM BACKLOG IN WEEKS
 0159                 BKLG = 0
 0160                 IF (BAKLOG (I)) 25, 25, 21
 0161             21 TEM1 = CAPA (I) - BCAPA (I)
 0162                 TEM2 = CONVA (I)
 0163                 IF (TEM2) 25, 25, 22
 0164             22 TEM2 = 50. / TEM2
 0165                 TEM3 = BAKLOG (I) / TEM2
 0166                 BKLG = TEM1 * TEM3
 0167             25 CONTINUE
               C
               C
               C BEGIN INDIVIDUAL COURSE PRINT - CHECK IF WE HAVE PRINTED 3 ON THIS PAG
               C
 0168                 IF (PAGER .LE. 3) GO TO 4445
 0169                 WRITE (6,1000) YEAR,PAGE
               C
 0170                 WRITE (6, 1001) SCHOOL (I)
               C
 0171                 PAGER = 1
 0172                 PAGE = PAGE + 1
 0173           4445 CONTINUE
               C
 0174                 PAGER = PAGER + 1
               C
               C
               C READ FROM DEVICE 'WHERE' (12 IF INPUT FROM CARD, 11 IF FROM DATA BASE
               C GET COURSE NAME & CATALOG NUMBER FROM THIS FILE-SKIP COP AS IN CORE
               C
 0175                 READ (WHERE, 5000, END = 4999) CTLG1, CTLG2, (CRSNAM (J), J= 1,15)
 0176           5000 FORMAT (10X, 2A5, 15A4)
 0177           4999 CONTINUE
               C
               C NOW PRINT OUT INDIVIDUAL SCHOOL SUMMARY
               C
 0178                 WRITE (6,2000) (CRSNAM(Q), Q=1,15)
```

```
0179            WRITE (6,2001)
0180            WRITE (6,2002) YEAR20,YEAR20,YEAR20,YEAR20
0181            WRITE (6, 2003) COP (I), DSD (I), CTLG1, CTLG2, NEC (I)
0182            WRITE (6,2004) (TCONV(Q,I), Q=1,5)
0183            WRITE (6,2005) (TCAP(Q,I), Q=1,5)
0184            WRITE (6,2006) ((TUTIL(Q,I),PCTUTL(Q)), Q=1,5)
0185            WRITE (6,2007) CONVA(I),CONVB(I),((TNOSHO(Q,I),PCTNSH(Q)), Q=1,5)
0186            WRITE (6,2008) LEVA(I),LEVB(I),((TBALOG(Q,I),BKL(Q)), Q=1,5)
0187            WRITE (6,2009) CAPA(I),CAPB(I),((TSDAYS(Q,I),AOB(Q)),Q=1,5)
0188            WRITE (6,2010) ACAPA(I),BCAPB(I)
0189            WRITE (6,2011) ((PASS(Q),PCTPAS(Q)), Q=1,5)
0190            WRITE (6,2012) DEMAND(I),CHGWK(I),((FAIL(Q)  ,PCTFL(Q)), Q=1,5)
0191            WRITE (6,2013) BDMAND(I),OFFSET(I),((TSETBK(Q,I),PCTSB(Q)),Q=1,5)
0192            WRITE (6,2014) BKLG,BAKLOG(I), ((NADIS(Q)  ,PCTNDS(Q)), Q=1,5)
0193            WRITE (6,2015)
          C
          C IF I IS EQ CASES THIS IS LAST COURSE, SO FALL THROUGH & PRINT SCHOOL
          C SUMMARY.  OTHERWISE GO TO END OF DO LOOP & CONTINUE.
0194            IF (I .NE. CASES) GO TO 4444
          C
          C
          C
          C SCHOOL TOTALS ROUTINE
          C
0195        500 WRITE (6, 1000) YEAR, PAGE
0196            J = I
0197            IF (J .GT. 1) J = J - 1
0198            PAGE = PAGE + 1
0199            PAGER = 4
          C
0200            WRITE (6, 1001) SCHOOL (J)
0201            WRITE (6, 7001) SCHOOL (J)
          C
          C
          C ENTRY FOR FTC TOTALS
          C FROM HERE ON SAME ROUTINE IS USED FOR SCHOOL AND CENTER TOTALS PRINT
          C ROUTINE.  YEAR DATA HAS BEEN OVERWRITTEN INTO SCHOOL STORAGE AREAS.
          C
0202        560 CONTINUE
          C
          C CALCULATE YEARLY TOTALS
0203            DO 540 Q = 1, 4
0204            SCONV (5) = SCONV (5) + SCONV (Q)
0205            SCAP (5) = SCAP (5) + SCAP (Q)
0206            SUTIL (5) = SUTIL (5) + SUTIL (Q)
0207            SNOSHO (5) = SNOSHO (5) + SNOSHO (Q)
0208            SSDAYS (5) = SSDAYS (5) + SSDAYS (Q)
0209            SFAIL (5) = SFAIL (5) + SFAIL (Q)
0210            SSETBK (5) = SSETBK (5) + SSETBK (Q)
0211            SNADIS (5) = SNADIS (5) + SNADIS (Q)
0212        540 CONTINUE
          C
          C
          C NOW CALC PERCENTAGES
0213            DO 550 Q = 1, 5
          C
0214            TEM = ADBCON
0215            AOB (Q) = SSDAYS (Q) / TEM
```

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FORTRAN IV G LEVEL  21                 MAIN              DATE = 74265          22/44/14             PAGE 0007

0216                IF (Q .LT. 4) ADP (Q) = ADP (Q) * 4.
             C
0217                PASS (Q) = SUTIL (Q) - SFAIL (Q) - SNADIS (Q)
0218                IF (PASS (Q) .LT. 0) PASS (Q) = 0
             C
0219                PCTUTL (Q) = 0.
0220                TEM = SCAP (Q)
0221                IF (TEM .GT. 0.) PCTUTL (Q) =(SUTIL (Q) / TEM) * 100.
             C
0222                IF (SUTIL (Q)) 513, 513, 514
0223            513 CONTINUE
0224                PCTNSH (Q) = 0.
0225                PCTPAS (Q) = 0.
0226                PCTFL  (Q) = 0.
0227                PCTSB  (Q) = 0.
0228                PCTNDS (Q) = 0.
0229                GO TO 520
             C
0230            514 TEM = SUTIL (Q)
0231                TEM1 = SNOSHO (Q) + SUTIL (Q)
0232                PCTNSH (Q) = (SNOSHO (Q) / TEM1) * 100.
0233                PCTPAS (Q) =(PASS (Q) / TEM) * 100.
0234                PCTFL (Q) = (SFAIL (Q) / TEM) * 100.
0235                PCTSB (Q) = (SSETBK (Q) / TEM) * 100.
0236                PCTNDS (Q) = (SNADIS (Q) / TEM) * 100.
0237            520 CONTINUE
0238            550 CONTINUE
             C
             C PRINT ROUTINE
             C PRINT SCHOOL AND CENTER TOTALS
             C
0239                WRITE (6, 7002)
0240                WRITE (6, 7003) YEAR2D, YEAR2D, YEAR2D, YEAR2D
0241                WRITE (6, 7004)
0242                WRITE (6, 7005) (SCONV (Q), Q = 1, 5)
0243                WRITE (6, 7006) (SCAP (Q), Q = 1, 5)
0244                WRITE (6, 7007) ((SUTIL (Q), PCTUTL (Q)), Q = 1, 5)
0245                WRITE (6, 7008) ((SNOSHO (Q), PCTNSH (Q)), Q = 1, 5)
0246                WRITE (6, 7009) ((SSDAYS (Q), ADB (Q)), Q = 1, 5)
0247                WRITE (6, 7010)
0248                WRITE (6, 7011) ((PASS (Q), PCTPAS (Q)), Q = 1, 5)
0249                WRITE (6, 7012)((SFAIL (Q), PCTFL (Q)), Q = 1, 5)
0250                WRITE (6, 7013) ((SSETBK (Q), PCTSB (Q)), Q = 1, 5)
0251                WRITE (6, 7014)((SNADIS (Q), PCTNDS (Q)), Q = 1, 5)
0252                WRITE (6, 7015)
             C
             C TEST IF END OF FILE - CALC YEAR CENTER TOTALS
             C TEST IF END OF FILE - GO PRINT CENTER TOTALS
0253                IF (ITEMS .EQ. CRSES) GO TO 580
0254                IF (ITEMS .GT. 900) GO TO 4444
             C
             C KEEP RUNNING - ZERO SCHOOL TOTALS & RETURN
0255                DO 563 Q = 1, 5
0256                SUTIL (Q) = 0
0257                SCAP  (Q) = 0
0258                SSETBK(Q) = 0
0259                SSDAYS(Q) = 0
0260                SNOSHO(Q) = 0
```

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FORTRAN IV G LEVEL  21                MAIN              DATE = 74265         22/44/16            PAGE 0008
            SCONV (Q) = 0
            SFAIL (Q) = 0
            SNADIS (Q) = 0
        561 CONTINUE
            GO TO 600
      C
      C
        560 CONTINUE
      C LOAD CENTER TOTALS INTO SCHOOL STORAGE - USE SCHOOL ROUTINE TO CALC
      C CENTER TOTALS.
            DO 581 Q = 1, 5
            SUTIL (Q) = CUTIL (Q)
            SCAP (Q) = CCAP (Q)
            SSETRM (Q) = CSETRM (Q)
            SSDAYS (Q) = CSDAYS (Q)
            SNOSHO (Q) = CNOSHO (Q)
            SCONV (Q) = CCONV (Q)
            SFAIL (Q) = CFAIL (Q)
            SNADIS (Q) = CNADIS (Q)
        581 CONTINUE
      C
      C SET ITEMS FOR RETURN
            ITEMS = 999
      C
      C NOW PRINT HEADER DATA
      C
            WRITE (6, 1000) YEAR, PAGE
            WRITE (6, 8001)
       8001 FORMAT (1H0, T43, '********* TOTALS FOR FLEET TRAINING CENTER *****
           1****', //////)
            GO TO 560
       4444 CONTINUE
      C
       1001 FORMAT (1X,T59,'SCHOOL CODE  ',A6)
       2000 FORMAT (/1H0,15A6)
      C
       2002 FORMAT (1X,'LDP    J NO   CATALOG NO    NEC',T62,'| 1 QTR FY ',
           * I2,' | 2 QTR FY ',I2,' | 3 QTR FY ',I2,' | 4 QTR FY ',I2,
           * ' | ANNUAL TOTAL |')
      C
       2003 FORMAT (1X,A4,T9,A4,T16,2A5, 3X, A4,
           1                                   T62, '--------------------|-----------
           *--|-------------|-------------|-------------|--------------|')
      C
       2004 FORMAT (1X,T42,'NUMBER OF CONVENINGS|',I5,' |',T76,'|',I5,' |',
           * T90,'|',I5,' |',T104,'|',I5,' |',T118,'|',I6,' |       |')
      C
       2005 FORMAT (1X,'--- COURSE DATA ---  INITIAL CHARGE',T42, 'COURSE CAPA
           *CITY',T62,'|',I5,' |',T76,'|',I5,' |',T90,'|',I5,' |',T104,'|',
           * I5,' |',T118,'|',I6,' |',A6,'|')
      C
       2006 FORMAT (1X,T42,'UTILIZATION%',T62,'|',I5,' |',F5.1,'%|',I5,' |',
           * F5.1,'%|',I5,' |',F5.1,'%|',I5,' |',F5.1,'%|',I6,' |',F5.1,'%|')
      C
       2007 FORMAT (1X,'ANNUAL CONVENINGS',T24,I5,T31,I5,T42,'NO SHOWS',T62,
           * '|',I5,' |',F5.1,'%|',I5,' |',F5.1,'%|',I5,' |',F5.1,'%|',I5,
           * ' |',F5.1,'%|',I6,' |',F5.1,'%|')
      C
```

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```
0291          [illegible] FORMAT ([illegible] LENGTH [illegible] 'BACKLOG-STU
                 [illegible]
               * [illegible]
            C
0292          [illegible] FORMAT ([illegible] CAPACITY [illegible] 'STUDENT DAYS / AD
               D' [illegible]
               * [illegible]
            C
0293          2010 FORMAT ([illegible] SEATS' [illegible]
               * [illegible]
               * [illegible]
            C
0294          2011 FORMAT ([illegible] 'TOTAL PASS' [illegible]
               * [illegible]
            C
0295          2012 FORMAT ([illegible] 'ANNUAL DEMAND ' [illegible] CHANGE WEEK [illegible] 'TOTAL P
               [illegible]
               * [illegible]
            C
0296          2013 FORMAT ([illegible] DEMAND [illegible] OFFSET WKS [illegible] 'ACADEMIC
               [illegible]
               * [illegible]
            C
0297          2014 FORMAT ([illegible] 'INITIAL [illegible] BACKLOG WKS [illegible] 'NON-ACAD
               [illegible]
               * [illegible]
            C
0298          2005 FORMAT ([illegible] '--------------------------------------------------
               *-------------------------------------------' ,///)
            C
0299          1000 FORMAT ([illegible] MODEL -- FISCAL YEAR ' [illegible] SUMMARY' [illegible]
               * 'PAGE ' [illegible]
            C
0300          2001 FORMAT ([illegible] 'QUARTERLY PROJECTIONS')
0301          7001 FORMAT ([illegible] 'SCHOOL CODE ' [illegible] SUMMARY')
0302          7002 FORMAT ([illegible] 'QUARTERLY PROJECTIONS')
            C
0303          7003 FORMAT ([illegible] 1 QTR FY ' [illegible] 2 QTR FY ' [illegible] 3 QTR
               * FY ' [illegible] 4 QTR FY ' [illegible] ANNUAL TOTAL [illegible]
            C
0304          7004 FORMAT ([illegible] '----------------------------I--------------------I--------------
               *--I----------------------I----------------------I---------------------I')
            C
0305          7005 FORMAT ([illegible] 'NUMBER OF CONVENINGS' [illegible]
               * [illegible]
            C
0306          7006 FORMAT ([illegible] 'COURSE CAPACITY' [illegible]
               * [illegible]
            C
0307          7007 FORMAT ([illegible] 'UTILIZATION' [illegible]
               * [illegible]
               * [illegible]
            C
0308          7008 FORMAT ([illegible] 'NO SHOWS' [illegible]
               * [illegible]
               * [illegible]
            C
0309          7009 FORMAT ([illegible] 'STUDENT DAYS / ADD [illegible]
```

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FORTRAN IV G LEVEL  21              MPRINT              DATE = 74265        22/44/14              PAGE 0010
                 * F6.1,' |',I6,' |',F6.1,' |',I6,' |',F6.1,' |',I7,' |',
                 * F6.1,' |')
           C
 0310         7010 FORMAT (1X,T37,'|',7X,'|',7X,'|',7X,'|',7X,'|',7X,'|',7X,'|',7X,
                 *'|',7X,'|',3X,'|',7X,'|')
           C
 0311         7011 FORMAT (1X,T17,'TOTAL PASS',T37,'|',I6,' | ',F5.1,'%|',I6,' | ',
                 * F5.1,'%|',I6,' | ',F5.1,'%|',I6,' | ',F5.1,'%|',I7,' | ',F5.1,
                 * '%|')
           C
 0312         7012 FORMAT (1X,T17,'TOTAL FAIL',T37,'|',I6,' | ',F5.1,'%|',I6,' | ',
                 * F5.1,'%|',I6,' | ',F5.1,'%|',I6,' | ',F5.1,'%|',I7,' | ',F5.1,
                 * '%|')
 0313         7013 FORMAT(1X,T17,'ACADEMIC SETBACK    |',I6,' | ',F5.1,'%|',I6,
                 * ' | ',F5.1,'%|',I6,' | ',F5.1,'%|',I6,' | ',F5.1,'%|',I7,' | ',
                 * F5.1,'%|')
           C
 0314         7014 FORMAT (1X,T17,'NON-ACADEM DISENROLL|',I6,' | ',F5.1,'%|',I6,
                 * ' | ',F5.1,'%|',I6,' | ',F5.1,'%|',I6,' | ',F5.1,'%|',I7,' | ',
                 * F5.1,'%|')
           C
 0315         7015 FORMAT (1X,T17,'------------------------------------------------------------
                 *-----------------------------------------------------')
           C
 0316              RETURN
 0317              END
```

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APPLICATION PROGRAM FLOWCHARTS

The following pages contain flowcharts for these TPF model application support programs:

CARDIN
UNLOAD1
FAIL1
FAIL2
FAIL3

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04/27/76 AUTOFLOW CHART SET - PAGE 02

CHART TITLE - PROCEDURES

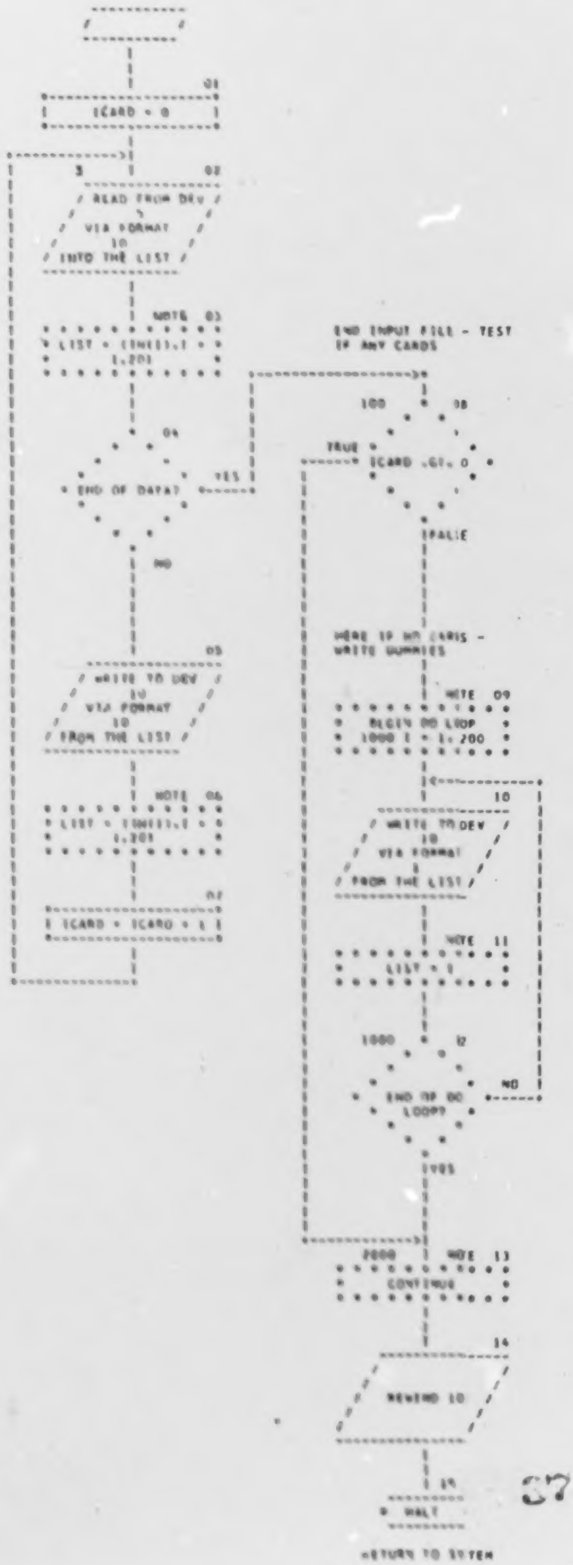
01
ICARD = 0
5
02
READ FROM DEV 5 VIA FORMAT 10 INTO THE LIST
NOTE 03
LIST = (INE(I),I = 1,20)
04
END OF DATA?
YES
NO
05
WRITE TO DEV 10 VIA FORMAT 10 FROM THE LIST
NOTE 06
LIST = (INE(I),I = 1,20)
07
ICARD = ICARD + 1
END INPUT FILE - TEST IF ANY CARDS
100
08
TRUE
ICARD .GT. 0
FALSE
HERE IF NO CARDS - WRITE DUMMIES
NOTE 09
BEGIN DO LOOP 1000 I = 1, 200
10
WRITE TO DEV 10 VIA FORMAT 1 FROM THE LIST
NOTE 11
LIST = 1
1000
12
END OF DO LOOP?
NO
YES
2000
NOTE 13
CONTINUE
14
REWIND 10
15
HALT
RETURN TO SYSTEM

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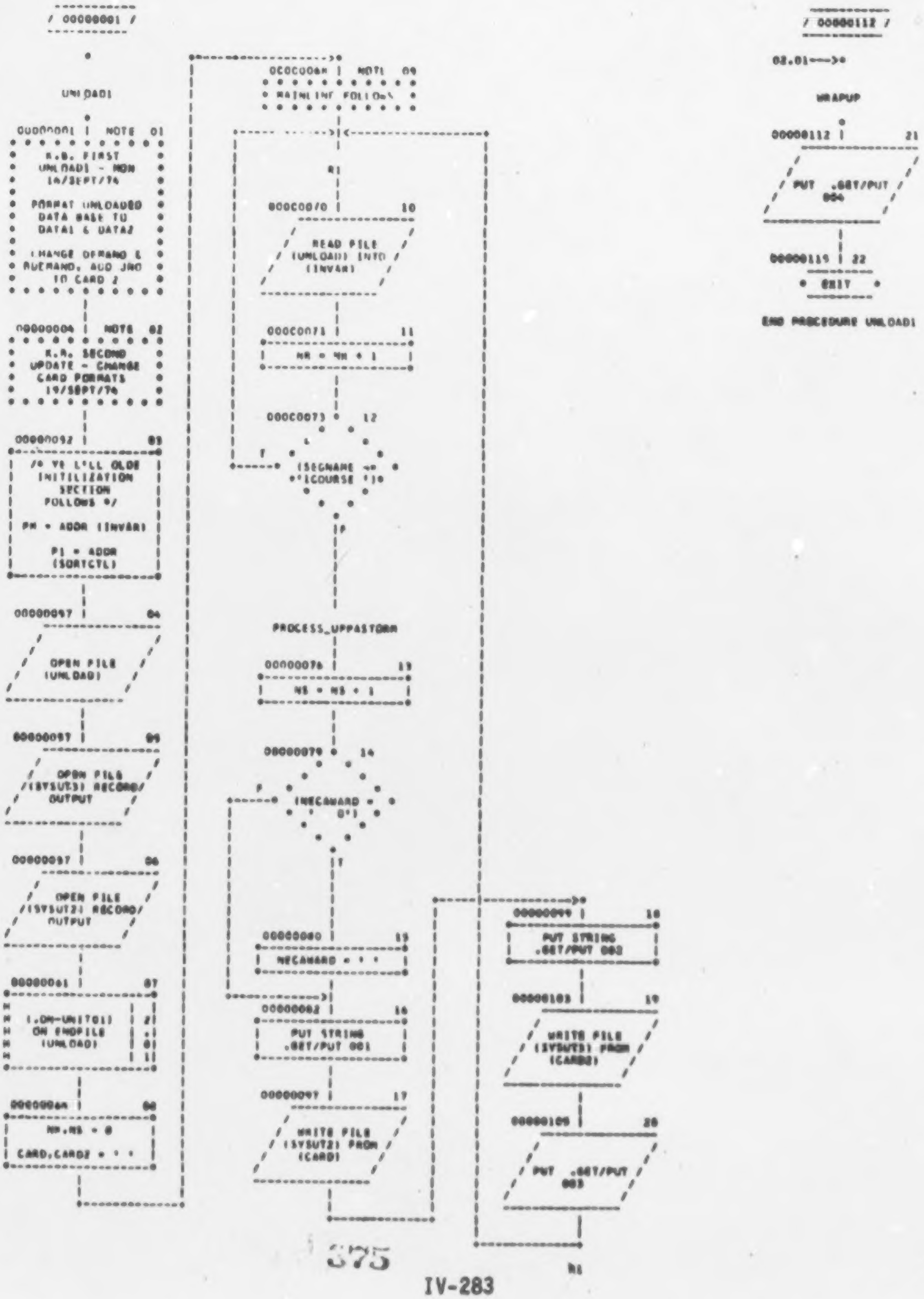
CHART TITLE - PROC UNLOAD1 OPTIONS (MAIN)


/ 00000001 /
UNLOAD1
00000001 | NOTE 01
K.B. FIRST
UNLOAD1 - MON
16/SEPT/74
FORMAT UNLOADED
DATA BASE TO
DATA1 & DATA2
CHANGE DEMAND &
RDEMAND, ADD JNO
TO CARD 2
00000004 | NOTE 02
K.R. SECOND
UPDATE - CHANGE
CARD FORMATS
19/SEPT/74
00000032 | 03
/* YE L'LL OLDE
INITILIZATION
SECTION
FOLLOWS */
PM = ADDR (INVAR)
P1 = ADDR
(SORTCTL)
00000057 | 04
OPEN FILE
(UNLOAD)
00000057 | 05
OPEN FILE
(SYSUT3) RECORD
OUTPUT
00000057 | 06
OPEN FILE
(SYSUT2) RECORD
OUTPUT
00000061 | 07
(.ON-UNIT01)
ON ENDFILE
(UNLOAD)
2.01
00000064 | 08
NR,NS = 0
CARD,CARD2 = ' '
00000068 | NOTE 09
MAINLINE FOLLOWS
R1
00000070 | 10
READ FILE
(UNLOAD) INTO
(INVAR)
00000071 | 11
NR = NR + 1
00000073 | 12
(SEGNAME -=
'ICOURSE ')
T
F
PROCESS_UPPASTORM
00000076 | 13
NS = NS + 1
00000079 | 14
(NEGAWARD =
' 0')
F
T
00000080 | 15
NEGAWARD = ' '
00000082 | 16
PUT STRING
.GET/PUT 001
00000097 | 17
WRITE FILE
(SYSUT2) FROM
(CARD)
00000099 | 18
PUT STRING
.GET/PUT 002
00000103 | 19
WRITE FILE
(SYSUT3) FROM
(CARD2)
00000105 | 20
PUT .GET/PUT
003
R1
/ 00000112 /
02.01--->
WRAPUP
00000112 | 21
PUT .GET/PUT
004
00000115 | 22
EXIT
END PROCEDURE UNLOAD1

```
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CHART TITLE - ON-UNIT ACTION BLOCKS

                                              ----------
                                             / UC000062 /
                                              ----------

                                       01.07--->*

                                       .ON-UNIT01

                                                *
                                       UC000062 |  NOTE  01
                                       * * * * * * * * * * *
                                       *    ON ENDFILE     *
                                       *     (UNLOAD)      *
                                       * * * * * * * * * * *
                                                |
                                                |
                                                |
                                               ...
                                              .   .
                                              . 1.21.
                                              .   .
                                               ...

                                              WRAPUP

                                          END .ON-UNIT01
```

```
[illegible]                                AUTOFLOW CHART SET -                                PAGE 03

CHART TITLE - GETPUT, FORMAT STATEMENTS


[illegible]     .GETPUT 001  PUT STRING (CARD) EDIT (CRSNO,DEPT,MINCON,LENGTH,INSTCAP,MUPCAP,CHNGDATE,OFFSET,NMINCON,
[illegible]                  NLENGTH,NINSTCAP,NMUPCAP,WAIT,TPP1 (2),TPP1 (1),TPP2 (2),TPP2 (1),CRSTYPE,TPP2 (1),JMD,
[illegible]                  NCLAWAIT) (A (4),A (4),P '9V9',P '99V9',P '999',P '999',P '999',F (3),P '999',P '99V9',P '999',
[illegible]                  P '999',P '99',2 P '99999',A (4),2 P '999V99',P '9',P '999V9',X (3),2 A (4))
[illegible]     .GETPUT 002  PUT STRING (CARD2) EDIT (CRSNO,DEPT,PMCPIX,CRSNAME) (A (4),A (6),A (10),A (60))
[illegible]     .GETPUT 003  PUT EDIT (CARD2,CARD) (SKIP (2),X (20),A (80),SKIP (1),X (20),A (80))
[illegible]     .GETPUT 004  PUT DATA [illegible] SKIP (2)
```

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CHART TITLE - PROC FAIL1 OPTIONS (MAIN)

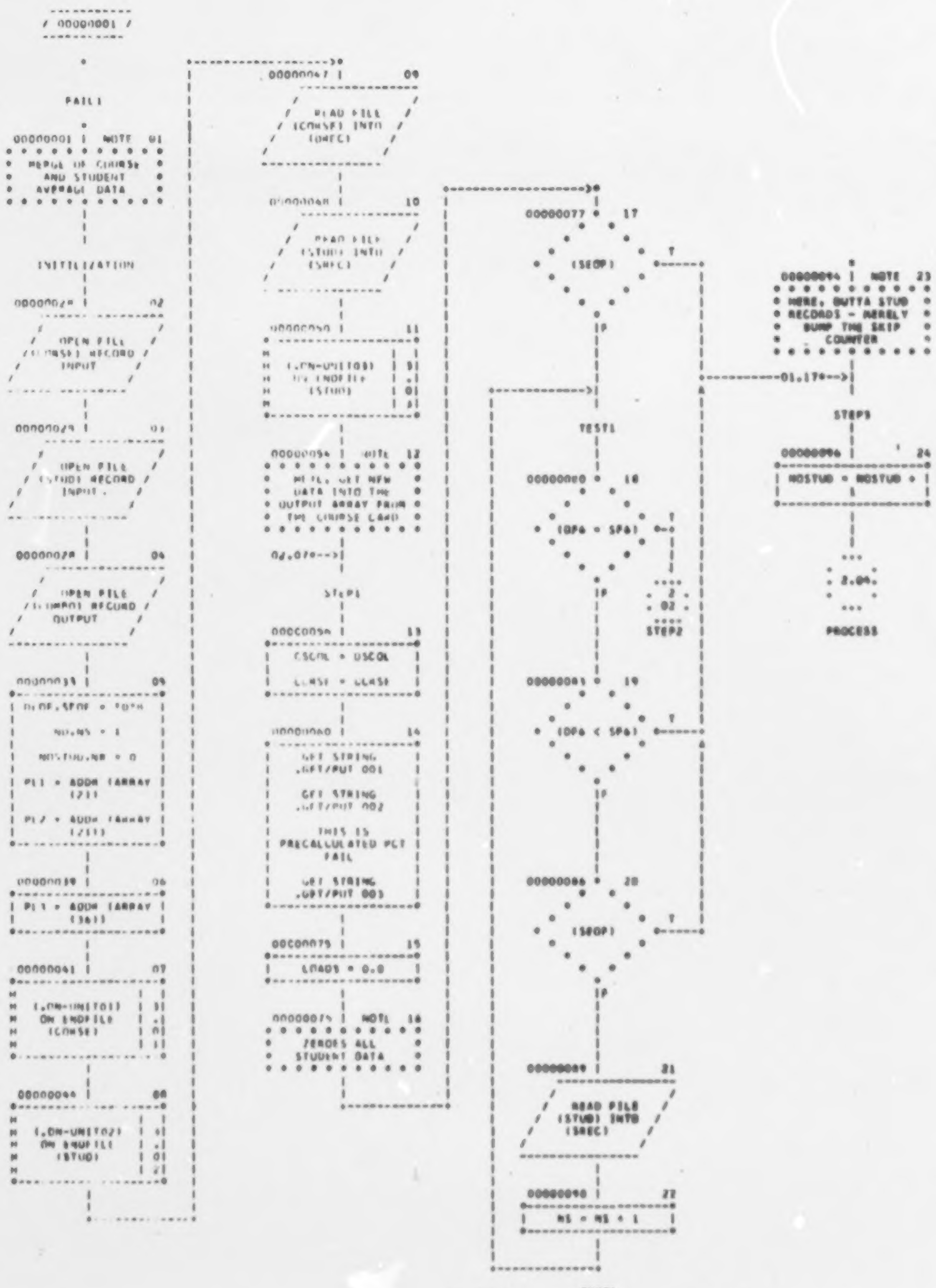
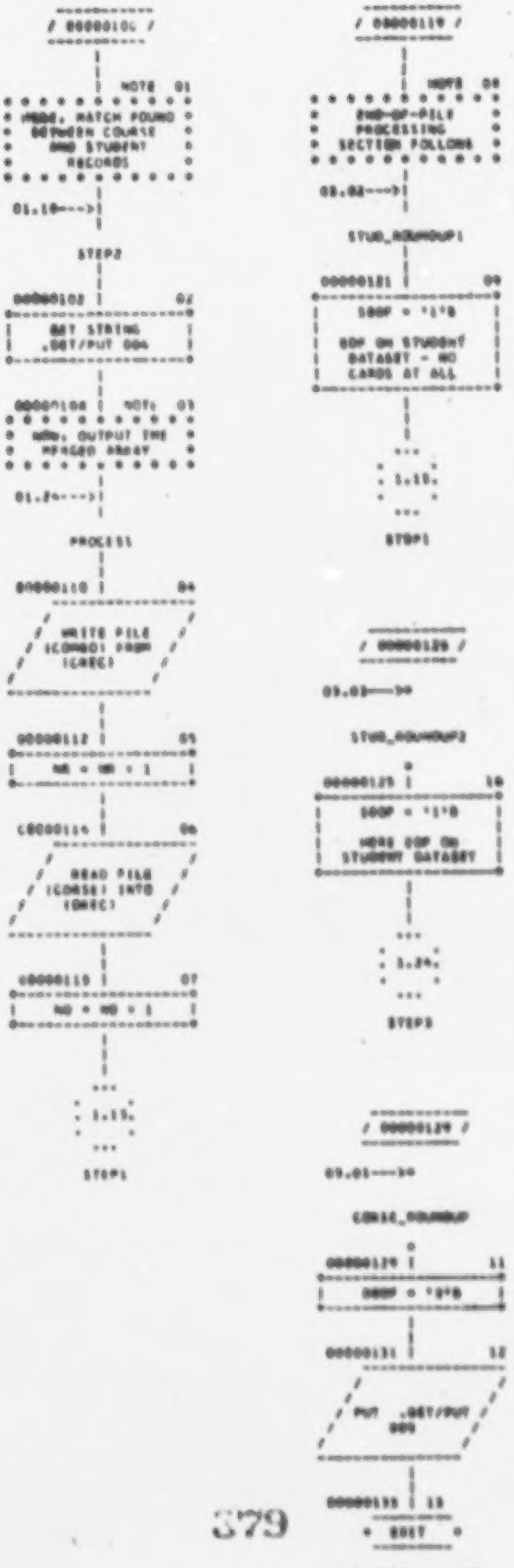
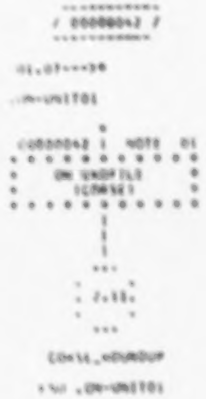
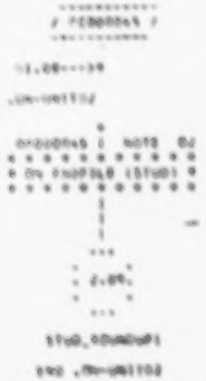

00000001
FAIL1
00000001 NOTE 01
MERGE OF COURSE AND STUDENT AVERAGE DATA
INITIALIZATION
00000024 02
OPEN FILE (CONSE) RECORD INPUT
00000025 03
OPEN FILE (STUD) RECORD INPUT
00000028 04
OPEN FILE (COMBO) RECORD OUTPUT
00000033 05
DLOF,SEOF = TO'H
NO,NS = 1
NOSTUD,NR = 0
PL1 = ADDR (ARRAY (2))
PL2 = ADDR (ARRAY (21))
00000039 06
PL3 = ADDR (ARRAY (36))
00000041 07
(,ON-UNIT01) ON ENDFILE (CONSE)
00000044 08
(,ON-UNIT02) ON ENDFILE (STUD)
00000047 09
READ FILE (CONSE) INTO (CREC)
00000048 10
READ FILE (STUD) INTO (SREC)
00000050 11
(,ON-UNIT03) ON ENDFILE (STUD)
00000054 NOTE 12
HERE, GET NEW DATA INTO THE OUTPUT ARRAY FROM THE COURSE CARD
02,07*-->
STEP1
00000058 13
CSCOL = USCOL
CCRSE = CCRSE
00000060 14
GET STRING .GET/PUT 001
GET STRING .GET/PUT 002
THIS IS PRECALCULATED PCT FAIL
GET STRING .GET/PUT 003
00000075 15
LOADS = 0.0
00000075 NOTE 16
ZEROES ALL STUDENT DATA
00000077 17
(SEOF)
T
F
TEST1
00000080 18
(DP6 = SP6)
2 02
STEP2
00000083 19
(DP6 < SP6)
00000086 20
(SEOF)
00000089 21
READ FILE (STUD) INTO (SREC)
00000090 22
NS = NS + 1
TEST1
00000094 NOTE 23
HERE, OUTTA STUD RECORDS - MERELY BUMP THE SKIP COUNTER
01,17*-->
STEP3
00000096 24
NOSTUD = NOSTUD + 1
3 04
PROCESS

CHART TITLE - PROC FAILL OPTIONS (MAIN)


/ 00000106 /
NOTE 01
HERE, MATCH FOUND BETWEEN COURSE AND STUDENT RECORDS
01.10--->
STEP2
00000102 02
GET STRING .GET/PUT 004
00000108 NOTE 03
NOW, OUTPUT THE MERGED ARRAY
01.20--->
PROCESS
00000110 04
WRITE FILE (COMBO) FROM (CREC)
00000112 05
NR = NR + 1
00000114 06
READ FILE (CORSE) INTO (CREC)
00000115 07
NO = NO + 1
1.15
STEP1
/ 00000119 /
NOTE 08
END-OF-FILE PROCESSING SECTION FOLLOWS
03.02--->
STUD_ROUNDUP1
00000121 09
SEOF = '1'B
EOF ON STUDENT DATASET - NO CARDS AT ALL
1.10
STEP1
/ 00000124 /
03.03--->
STUD_ROUNDUP2
00000125 10
SEOF = '1'B
HERE EOF ON STUDENT DATASET
1.24
STEP3
/ 00000129 /
03.01--->
CORSE_ROUNDUP
00000129 11
CEOF = '1'B
00000131 12
PUT .GET/PUT 005
00000133 13
EXIT
END PROCEDURE FAILL


NOTE 01
2.11


NOTE 02
2.09

NOTE 03
2.10

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```
[illegible]          .GETPUT 001  GET STRING (WORK) EDIT (LOWORD) (X [illegible]
[illegible]                   [illegible]
[illegible]          .GETPUT 002  GET STRING (WORK) EDIT [illegible]
[illegible]          .GETPUT 003  GET STRING (WORK) EDIT (LOWORD) (X [illegible]
[illegible]          .GETPUT 004  GET STRING (WORK) EDIT (LOWORD) (X [illegible]
[illegible]                   ))
[illegible]          .GETPUT 005  PUT DATA [illegible] SKIP (3)
```

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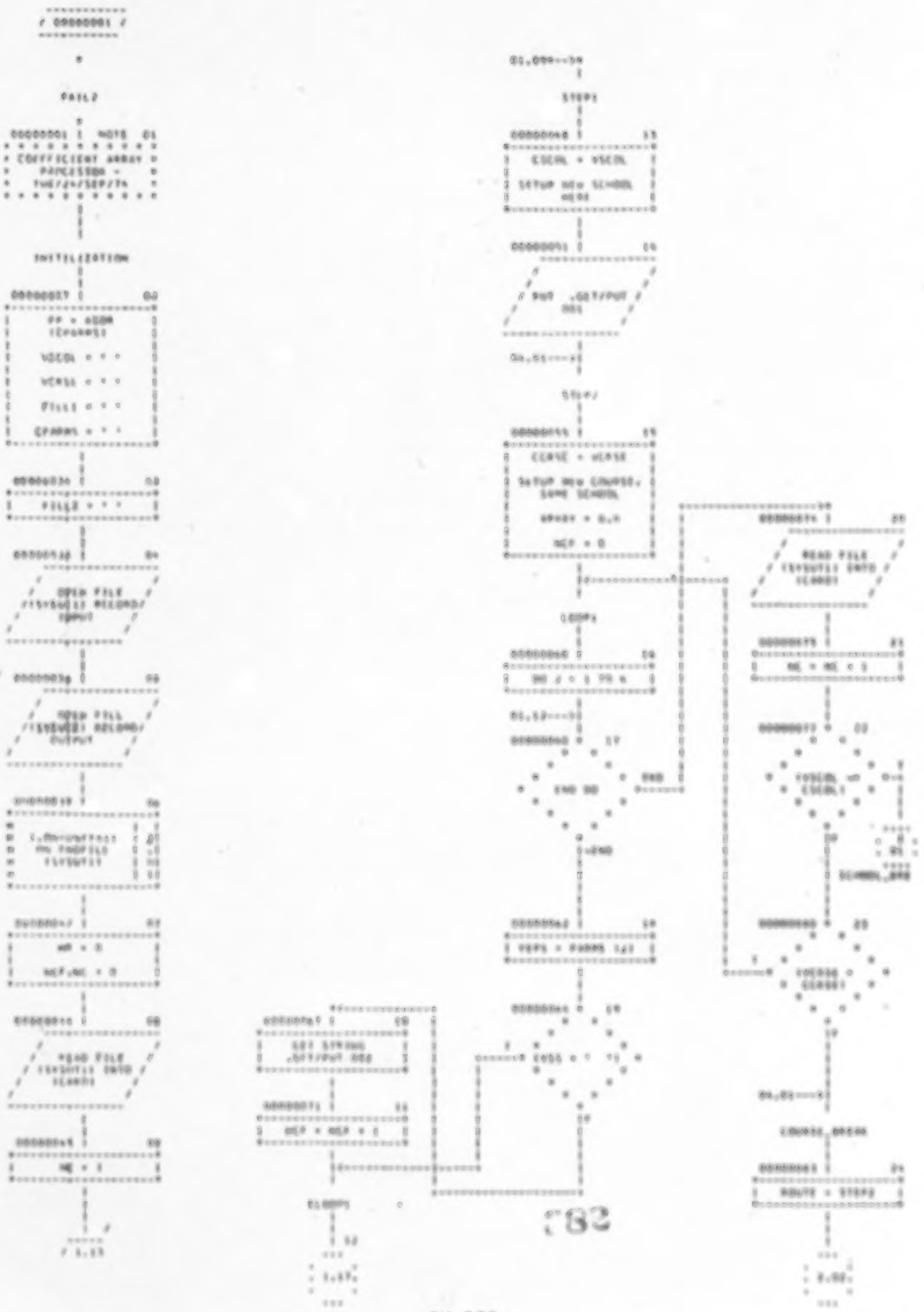
CHART TITLE - PROC FAIL2 OPTIONS (MAIN)


FAIL2
COEFFICIENT ARRAY
INITIALIZATION
OPEN FILE
READ FILE
STEP1
SETUP NEW SCHOOL
STEP2
SETUP NEW COURSE, SAME SCHOOL
LOOP1
END DO
SCHOOL_BRK
COURSE_BREAK
ROUTE = STEP2

382

PUT GET/PUT
EXIT
END PROCEDURE
PUT GET/PUT
WRITE FILE
ROUTE

381

```
                                   AUTOFLOW CHART SET -                                  PAGE 04
[illegible]

CHART TITLE - LABEL ASSIGNMENT CROSS REFERENCE


                             -----------
                            /  ROUTE   /
                            -----------
                                 |
                       02.04--->|
                                 |              01
                        *--------------------*
                        |       SCALAR       |
                        |   LABEL VARIABLE   |
                        *--------------------*
                        | SET AT   TO GO TO  |
                        |   1.24     1.15    |
                        | 00000064 STEP2     |
                        |   2.01     1.15    |
                        | 00000088 STEP1     |
                        |   2.05     2.06    |
                        | 00000104 LASTSTEP  |
                        *--------------------*
```

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```
                                         AUTOFLOW CHART SET -                                    PAGE 05
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CHART TITLE - GET/PUT, FORMAT STATEMENTS


00000051        .GET/PUT 001  PUT EDIT ('** SCHOOL CODE = [',CSCOL,']',(20) '_') (SKIP (2),X (10),A,A (1),A,SKIP (0),
00000053                   X (10),A (20))
00000067        .GET/PUT 002  GET STRING (YEPS) EDIT (K,ARRAY (K)) (F (2),F (13,7))
00000091        .GET/PUT 001  PUT EDIT ('COURSE = ',CCNSE,'  TOTAL COEFFICIENTS = ',NCF) (SKIP (1),X (20),A,A (4),A,F (2))
00000104        .GET/PUT 004  PUT DATA (NC,NR) SKIP (1)
```

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CHART TITLE - PROC FAIL3 OPTIONS (MAIN)

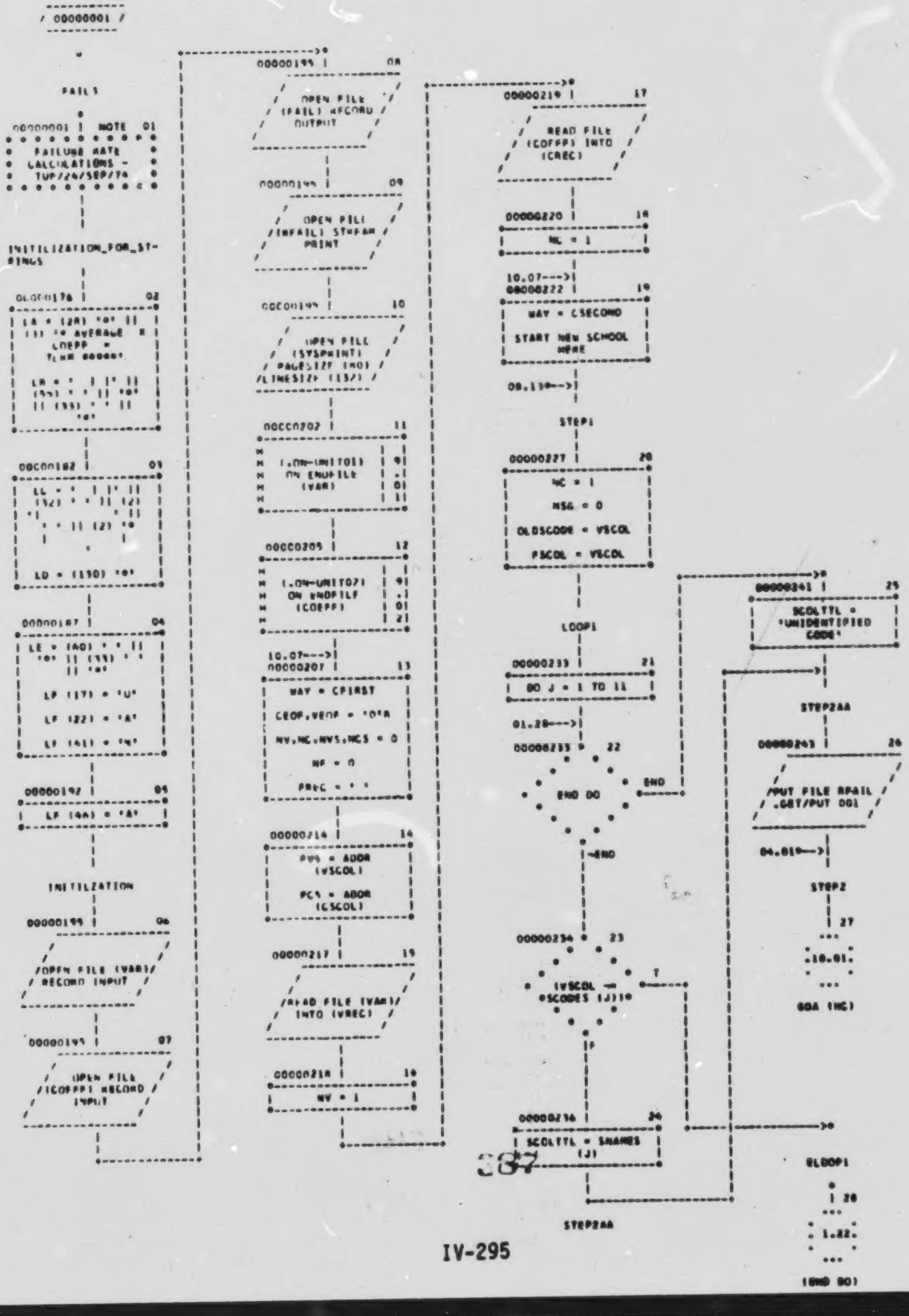
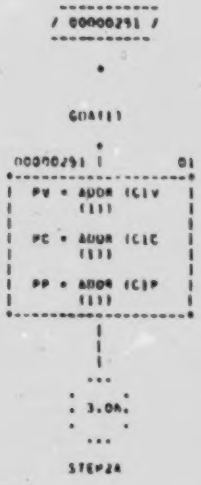
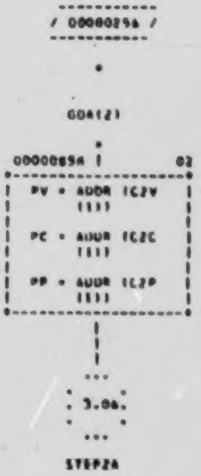

/ 00000001 /
FAIL3
00000001 NOTE 01
FAILURE RATE CALCULATIONS - TUP/24/SEP/74
INITILIZATION_FOR_STRINGS
00000176 02
LA = (2A) '0' || (1) '0 AVERAGE R COEFF = TERM 000000'
LB = ' ' || ' || (55) ' ' || '0' || (55) ' ' || '0'
00000182 03
LC = ' ' || ' || (32) ' ' || (2) ' || ' ' || (2) '0'
LD = (130) '0'
00000187 04
LE = (AO) ' ' || '0' || (33) ' ' || '0'
LF (17) = 'U'
LF (22) = 'A'
LF (41) = 'N'
00000192 05
LF (4A) = 'A'
INITILZATION
00000195 06
/OPEN FILE (VAR)/ RECORD INPUT
00000195 07
OPEN FILE (COEFF) RECORD INPUT
00000195 08
OPEN FILE (FAIL) RECORD OUTPUT
00000195 09
OPEN FILE (RFAIL) STREAM PRINT
00000195 10
OPEN FILE (SYSPRINT) PAGESIZE (60) LINESIZE (132)
00000202 11
(.ON-UNIT01) ON ENDFILE (VAR)
9.01
00000205 12
(.ON-UNIT02) ON ENDFILE (COEFF)
9.02
10.07--->
00000207 13
WAY = CFIRST
CEOF,VEOF = '0'B
NV,NC,NVS,NCS = 0
NF = 0
FREC = ' '
00000214 14
PVS = ADDR (VSCOL)
PCS = ADDR (CSCOL)
00000217 15
/READ FILE (VAR)/ INTO (VREC)
00000218 16
NV = 1
00000219 17
READ FILE (COEFF) INTO (CREC)
00000220 18
NC = 1
10.07--->
00000222 19
WAY = CSECOND
START NEW SCHOOL HERE
08.119-->
STEP1
00000227 20
NC = 1
NSG = 0
OLDSCODE = VSCOL
FSCOL = VSCOL
LOOP1
00000233 21
DO J = 1 TO 11
01.28--->
00000233 22
END DO
END
¬END
00000234 23
(VSCOL ¬= SCODES (J))
T
F
00000236 24
SCOLTTL = SNAMES (J)
STEP2AA
00000241 25
SCOLTTL = 'UNIDENTIFIED CODE'
STEP2AA
00000243 26
/PUT FILE RFAIL / .GET/PUT 001
04.019-->
STEP2
27
.10.01.
GOA (NC)
ELOOP1
28
1.22.
(END DO)

CHART TITLE - PROC FAILS OPTIONS (MAIN)


/ 00000291 /
GOA(1)
00000291
01
PV = ADDR (C1V (1))
PC = ADDR (C1C (1))
PP = ADDR (C1P (1))
3.0A.
STEP2A


/ 00000296 /
GOA(2)
00000296
02
PV = ADDR (C2V (1))
PC = ADDR (C2C (1))
PP = ADDR (C2P (1))
3.0A.
STEP2A

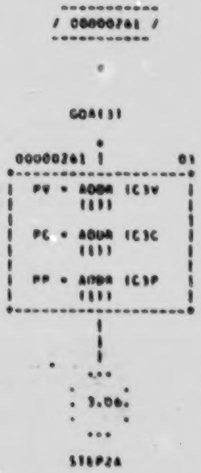

/ 00000261 /
GOA(3)
00000261
01
PV = ADDR (C3V (1))
PC = ADDR (C3C (1))
PP = ADDR (C3P (1))
3.0A.
STEP2A

CHART TITLE - PROC FAILS OPTIONS (MAIN)

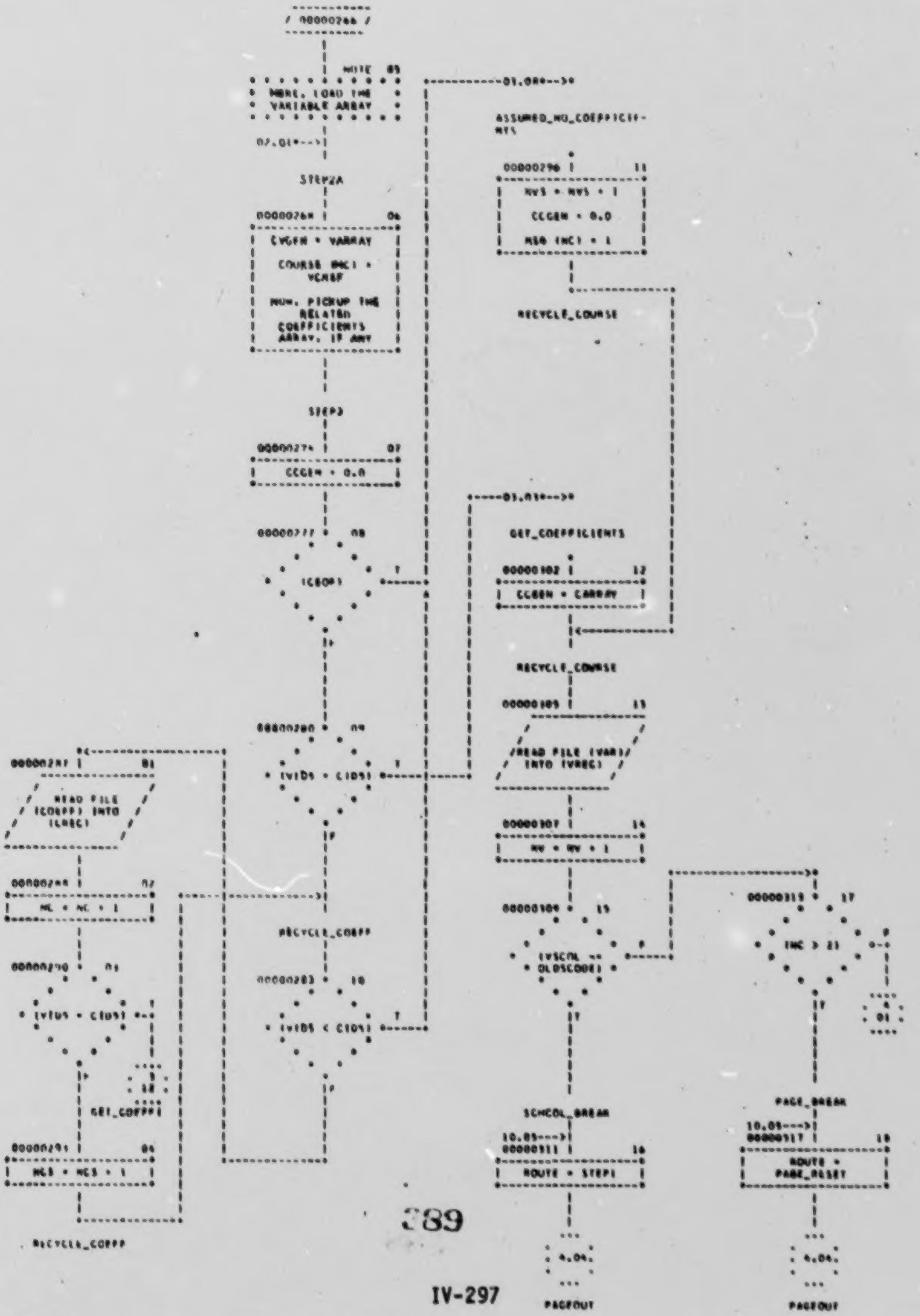

/ 00000266 /
NOTE 05
HERE, LOAD THE VARIABLE ARRAY
02.01*-->
STEP2A
00000268 06
CVGEN = VARRAY
COURSE (NC) = VCREF
NOW, PICKUP THE RELATED COEFFICIENTS ARRAY, IF ANY
STEP3
00000274 07
CCGEN = 0.0
00000277 08
(CEOF)
T
F
00000280 09
(VIDS = CIDS)
T
F
00000287 01
READ FILE (COEFF) INTO (CREC)
00000288 02
NC = NC + 1
00000290 03
(VIDS = CIDS)
T
F
. 3 . 12 .
GET_COEFF
00000291 04
NCS = NCS + 1
RECYCLE_COEFF
RECYCLE_COEFF
00000283 10
(VIDS < CIDS)
T
F
--03.08*-->
ASSUMED_NO_COEFFICIENTS
00000296 11
NVS = NVS + 1
CCGEN = 0.0
NSA (NC) = 1
RECYCLE_COURSE
--03.03*-->
GET_COEFFICIENTS
00000302 12
CCGEN = CARRAY
RECYCLE_COURSE
00000305 13
READ FILE (VAR) INTO (VREC)
00000307 14
NV = NV + 1
00000309 15
(VSCHL = OLDSCODE)
F
T
SCHOOL_BREAK
10.05--->
00000311 16
ROUTE = STEP1
4.04.
PAGEOUT
00000313 17
(NC > 21)
F
T
. 4 . 01 .
PAGE_BREAK
10.05--->
00000317 18
ROUTE = PAGE_RESET
4.04.
PAGEOUT

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CHART TITLE - PROC FAIL1 OPTIONS (MAIN)

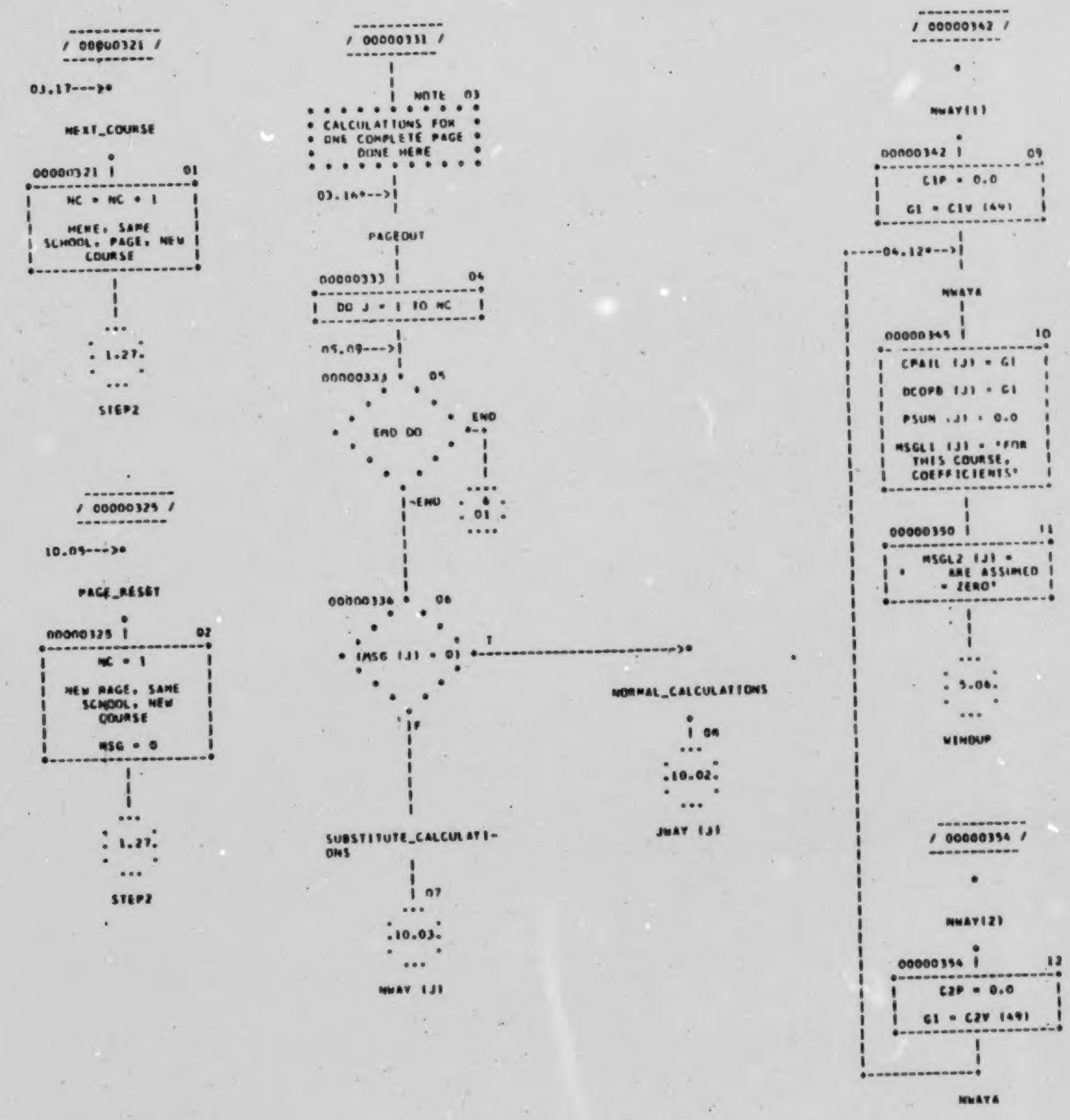
/ 00000321 /
03.17--->*
NEXT_COURSE
00000321 01
NC = NC + 1
HERE, SAME SCHOOL, PAGE, NEW COURSE
1.27.
STEP2
/ 00000325 /
10.09--->*
PAGE_RESET
00000325 02
NC = 1
NEW PAGE, SAME SCHOOL, NEW COURSE
MSG = 0
1.27.
STEP2
/ 00000331 /
NOTE 03
CALCULATIONS FOR ONE COMPLETE PAGE DONE HERE
03.16*--->
PAGEOUT
00000333 04
DO J = 1 TO NC
05.09--->
00000333 05
END DO
END
¬END
01
00000336 06
(MSG (J) = 0)
T
F
NORMAL_CALCULATIONS
08
10.02.
JWAY (J)
SUBSTITUTE_CALCULATIONS
07
10.03.
NWAY (J)
/ 00000342 /
NWAY(1)
00000342 09
C1P = 0.0
G1 = C1V (49)
04.12*--->
NWAYA
00000345 10
CFAIL (J) = G1
DCOPB (J) = G1
PSUM (J) = 0.0
MSGL1 (J) = 'FOR THIS COURSE, COEFFICIENTS'
00000350 11
MSGL2 (J) = ' ARE ASSUMED = ZERO'
5.06.
WINDUP
/ 00000354 /
NWAY(2)
00000354 12
C2P = 0.0
G1 = C2V (49)
NWAYA

CHART TITLE - PHCC FAILS OPTIONS (MAIN)

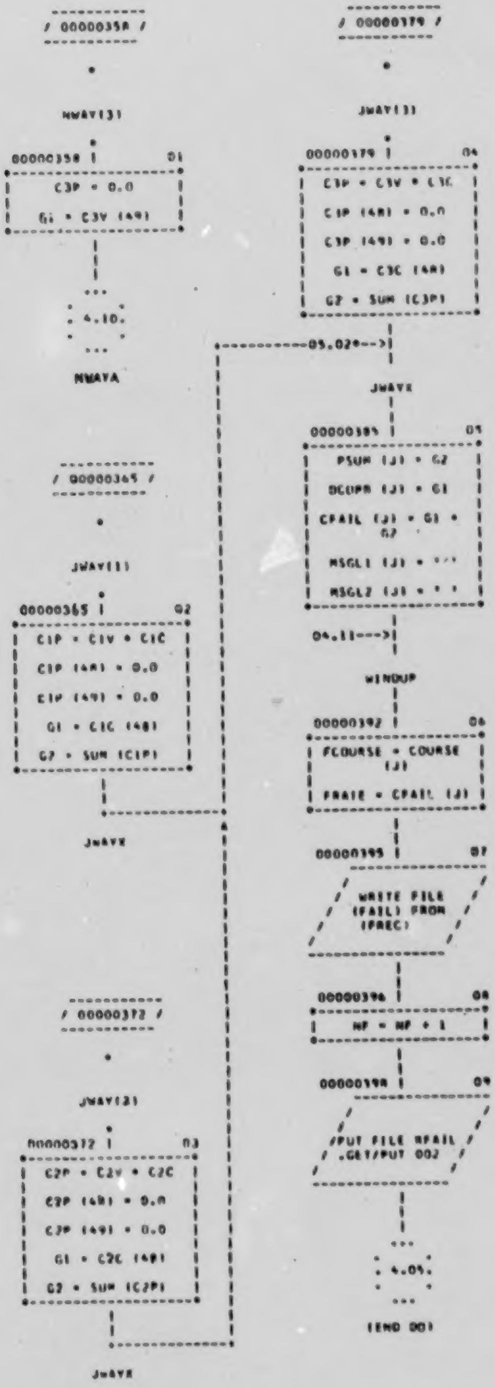
/ 00000358 /
NWAY(3)
00000358 01
C3P = 0.0
G1 = C3V (49)
4.10.
NWAYA
/ 00000365 /
JWAY(1)
00000365 02
C1P = C1V + C1C
C1P (48) = 0.0
C1P (49) = 0.0
G1 = C1C (48)
G2 = SUM (C1P)
JWAYX
/ 00000372 /
JWAY(2)
00000372 03
C2P = C2V + C2C
C2P (48) = 0.0
C2P (49) = 0.0
G1 = C2C (48)
G2 = SUM (C2P)
JWAYX
/ 00000379 /
JWAY(3)
00000379 04
C3P = C3V + C3C
C3P (48) = 0.0
C3P (49) = 0.0
G1 = C3C (48)
G2 = SUM (C3P)
05.02*-->
JWAYX
00000385 05
PSUM (J) = G2
DCUPR (J) = G1
CFAIL (J) = G1 + G2
MSGL1 (J) = '*'
MSGL2 (J) = ' '
04.11--->
WINDUP
00000392 06
FCOURSE = COURSE (J)
FRATE = CFAIL (J)
00000395 07
WRITE FILE (FAIL) FROM (FREC)
00000396 08
NF = NF + 1
00000398 09
PUT FILE NFAIL .GET/PUT 002
4.05.
(END 00)

CHART TITLE - PHUC FAIL1 OPTIONS (MAIN)

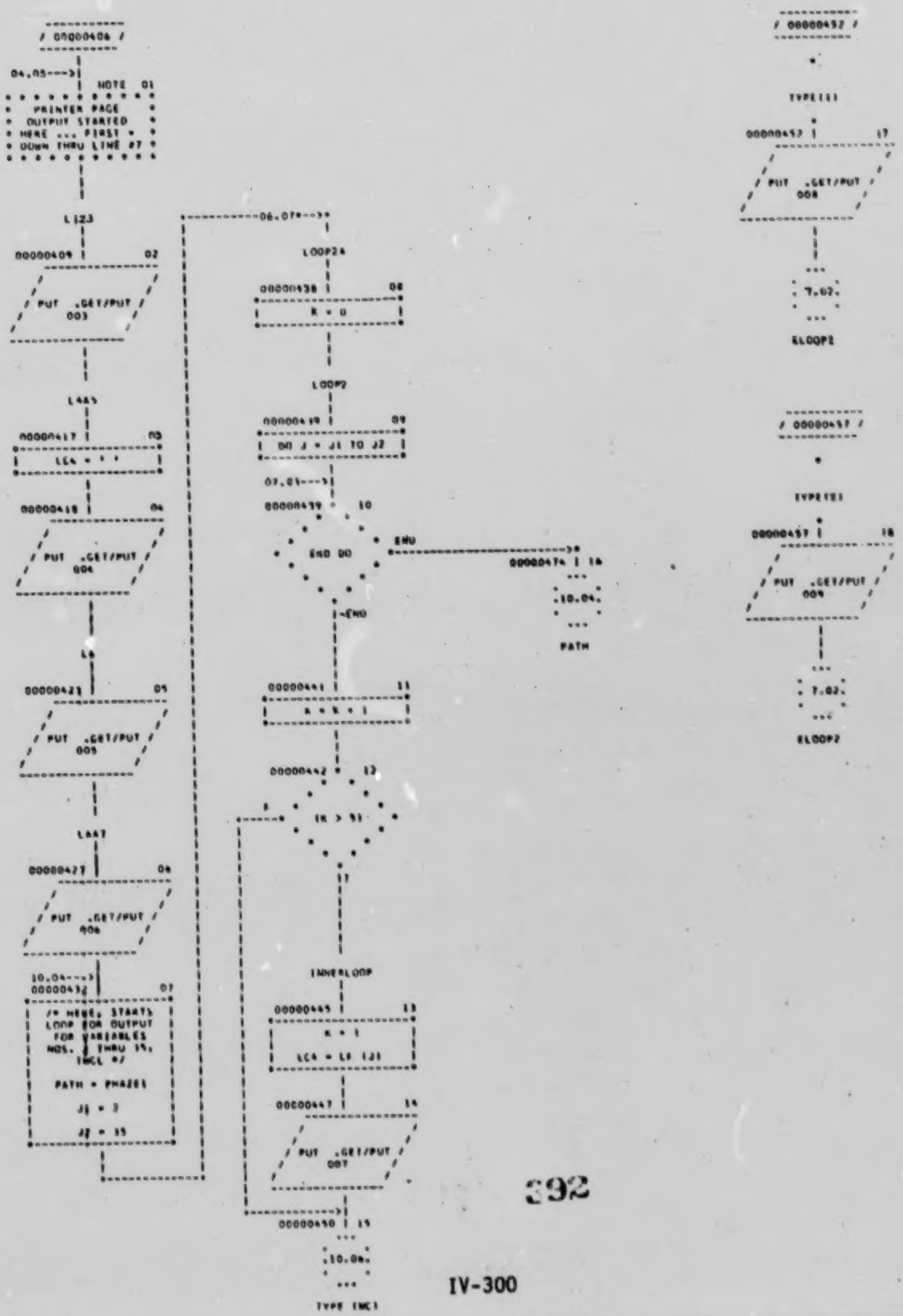
/ 00000406 /
04.05--->
NOTE 01
PRINTER PAGE
OUTPUT STARTED
HERE ... FIRST
DOWN THRU LINE #7
L123
00000409 02
PUT .GET/PUT
003
L4A5
00000417 03
LC4 = ' '
00000418 04
PUT .GET/PUT
004
L6
00000421 05
PUT .GET/PUT
005
LAA7
00000427 06
PUT .GET/PUT
006
10.04--->
00000432 07
/* HERE, STARTS
LOOP FOR OUTPUT
FOR VARIABLES
NOS. 3 THRU 35,
INCL */
PATH = PHAZE1
J1 = 3
J2 = 35
06.07*-->
LOOP2A
00000438 08
K = 0
LOOP2
00000439 09
DO J = J1 TO J2
07.01--->
00000439 10
END DO
END
00000474 16
10.04.
PATH
-END
00000441 11
K = K + 1
00000442 12
(K > 5)
T
F
INNERLOOP
00000445 13
K = 1
LC4 = LF (J)
00000447 14
PUT .GET/PUT
007
00000450 15
10.06.
TYPE INC1
/ 00000452 /
TYPE(1)
00000452 17
PUT .GET/PUT
008
7.02.
ELOOP2
/ 00000457 /
TYPE(2)
00000457 18
PUT .GET/PUT
009
7.02.
ELOOP2

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CHART TITLE - PROC FAIL; OPTIONS (MAIN)

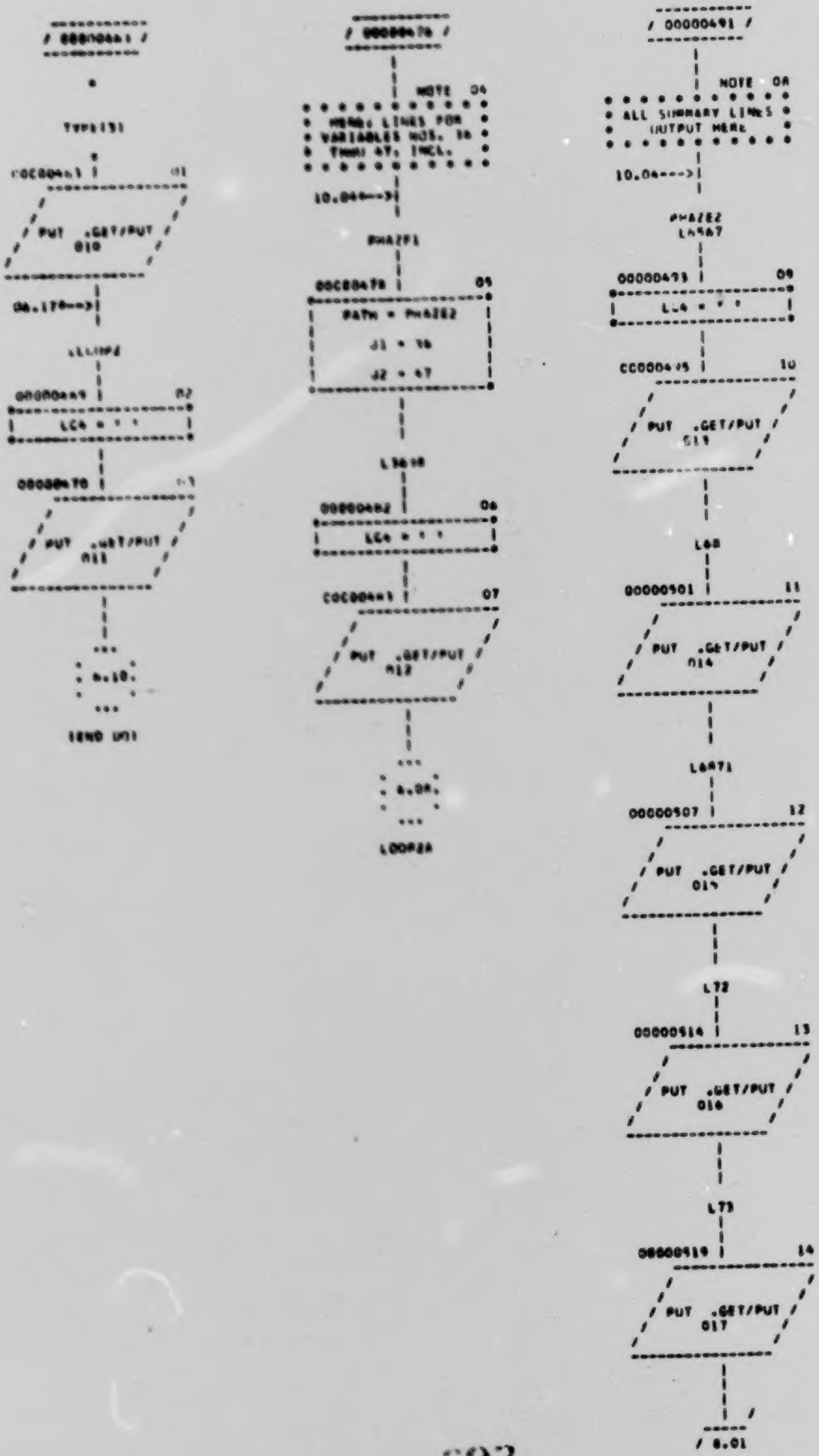
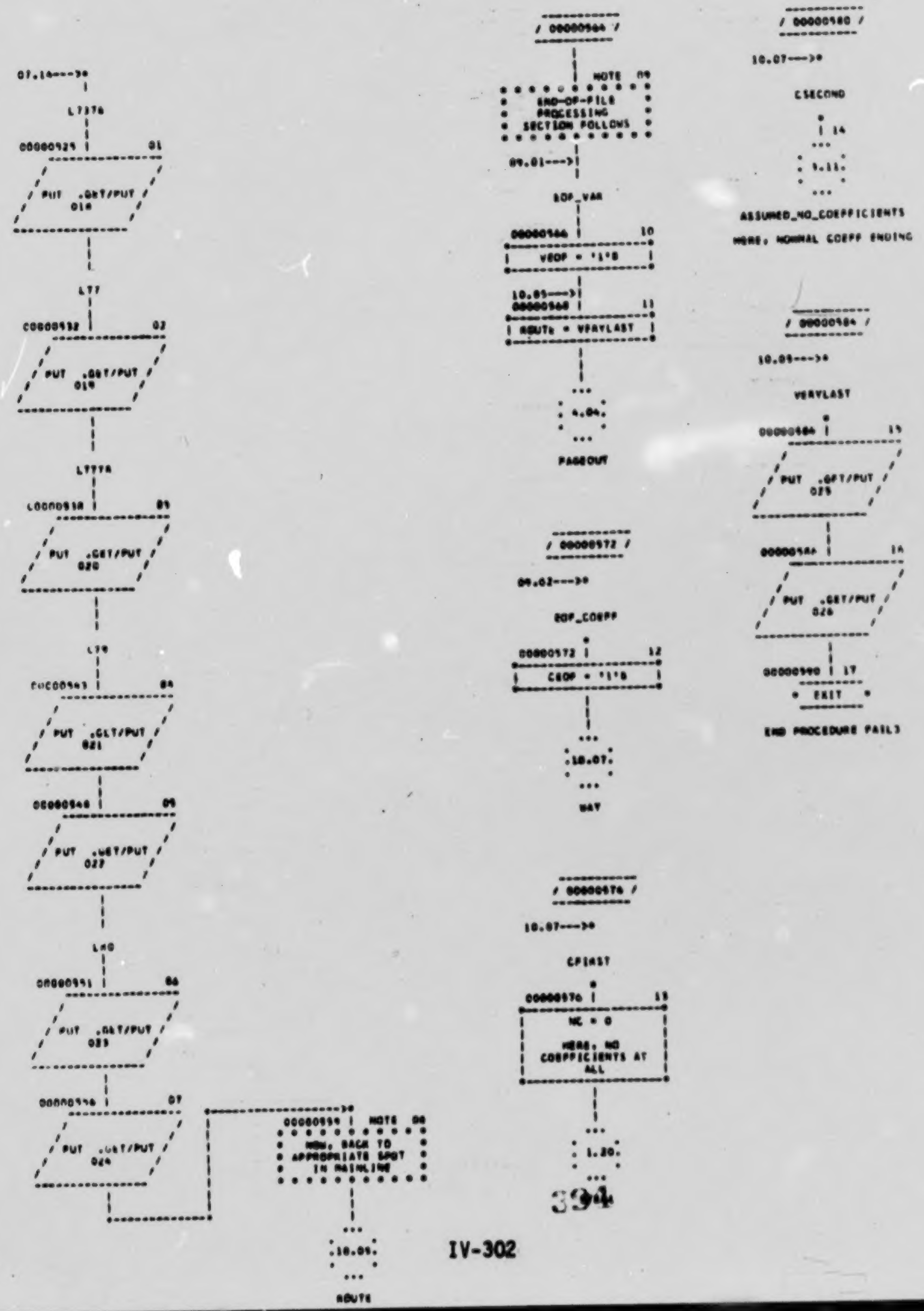

/ 00000461 /
TYPE(3)
00000463 01
PUT .GET/PUT 010
08.17---->
LLUMP2
00000469 02
LC4 = ' '
00000470 03
PUT .GET/PUT 011
8.10.
(END UN)
/ 00000476 /
NOTE 04
HEAD; LINES FOR VARIABLES NOS. 36 THRU 47, INCL.
10.04---->
PHAZE1
00000478 05
PATH = PHAZE2
J1 = 36
J2 = 47
L3610
00000482 06
LC4 = ' '
00000483 07
PUT .GET/PUT 012
8.08.
LOOP2A
/ 00000491 /
NOTE 08
ALL SUMMARY LINES OUTPUT HERE
10.04---->
PHAZE2
L4567
00000493 09
LC4 = ' '
00000495 10
PUT .GET/PUT 013
L68
00000501 11
PUT .GET/PUT 014
L6871
00000507 12
PUT .GET/PUT 015
L72
00000514 13
PUT .GET/PUT 016
L73
00000519 14
PUT .GET/PUT 017
/ 8.01

CHART TITLE - PROC FAIL3 OPTIONS (MAIN)


07.14---›*
L7376
00000929 01
PUT .GET/PUT 018
L77
00000932 02
PUT .GET/PUT 019
L7778
00000938 03
PUT .GET/PUT 020
L79
00000943 04
PUT .GLT/PUT 021
00000948 05
PUT .GET/PUT 022
L80
00000951 06
PUT .GET/PUT 023
00000956 07
PUT .GET/PUT 024
00000959 NOTE 08
NOW, BACK TO APPROPRIATE SPOT IN MAINLINE
10.05
ROUTE
/ 00000964 /
NOTE 09
END-OF-FILE PROCESSING SECTION FOLLOWS
09.01---›
EOF_VAR
00000966 10
VEOF = '1'B
10.05---›
00000968 11
ROUTE = VERYLAST
4.04
PAGEOUT
/ 00000972 /
09.02---›*
EOF_COEFF
00000972 12
CEOF = '1'B
10.07
WAY
/ 00000976 /
10.07---›*
CFIRST
00000976 13
NC = 0
HERE, NO COEFFICIENTS AT ALL
1.20
/ 00000980 /
10.07---›*
CSECOND
14
5.11
ASSUMED_NO_COEFFICIENTS
HERE, NORMAL COEFF ENDING
/ 00000984 /
10.05---›*
VERYLAST
00000984 15
PUT .GET/PUT 025
00000986 16
PUT .GET/PUT 026
00000990 17
EXIT
END PROCEDURE FAIL3

```
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CHART TITLE - ON-UNIT ACTION BLOCKS


                             -----------
                            / CC000203 /
                            -----------

                         01.11--->*

                        .ON-UNIT01

                                  *
                         00000203 I  NOTE  01
                        * * * * * * * * * * *
                        * ON ENDFILE (VAR)  *
                        * * * * * * * * * * *
                                  I
                                  I
                                  I
                                 ...
                               .     .
                               . N.10.
                               .     .
                                 ...

                               EOF_VAR

                          END .ON-UNIT01


                             -----------
                            / CC000206 /
                            -----------

                         01.12--->*

                        .ON-UNIT02

                                  *
                         00000206 I  NOTE  02
                        * * * * * * * * * * *
                        *    ON ENDFILE     *
                        *      (COEFF)      *
                        * * * * * * * * * * *
                                  I
                                  I
                                  I
                                 ...
                               .     .
                               . N.12.
                               .     .
                                 ...

                              EOF_COEFF

                          END .ON-UNIT02
```

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CHART TITLE - LABEL ASSIGNMENT CROSS REFERENCE


              ************                            ************
             /   GOA     /                           /   TYPE    /
             ************                            ************
                  I                                        I
       01.27---->I                              04.19---->I
                  I           01                           I            02
    *-------------------------*                  *-------------------------*
    I          ARRAY          I                  I          ARRAY          I
    I     LABEL VARIABLE      I                  I     LABEL VARIABLE      I
    *-------------------------*                  *-------------------------*
    I     VALUE AMBIGUOUS     I                  I     VALUE AMBIGUOUS     I
    *-------------------------*                  *-------------------------*


              ************                            ************
             /   JWAY    /                           /   WAY     /
             ************                            ************
                  I                                        I
       04.08---->I                              08.12---->I
                  I           03                           I            07
    *-------------------------*                  *-------------------------*
    I          ARRAY          I                  I         SCALAR          I
    I     LABEL VARIABLE      I                  I     LABEL VARIABLE      I
    *-------------------------*                  *-------------------------*
    I     VALUE AMBIGUOUS     I                  I SET AT   TO GO TO       I
    *-------------------------*                  I    3.13      8.13       I
                                                 I 00000207 [illegible]    I
                                                 I    3.19      8.14       I
                                                 I 00000223 [illegible]    I
                                                 *-------------------------*


              ************
             /   MWAY    /
             ************
                  I
       04.07---->I
                  I           03
    *-------------------------*
    I          ARRAY          I
    I     LABEL VARIABLE      I
    *-------------------------*
    I     VALUE AMBIGUOUS     I
    *-------------------------*


              ************
             /   PATH    /
             ************
                  I
       04.14---->I
                  I           04
    *-------------------------*
    I         SCALAR          I
    I     LABEL VARIABLE      I
    *-------------------------*
    I SET AT   TO GO TO       I
    I    6.07      7.09       I
    I 00000616 PHASE1         I
    I    7.09      7.09       I
    I 00000670 PHASE2         I
    *-------------------------*


              ************
             /   ROUTE   /
             ************
                  I
       08.09---->I
                  I           05
    *-------------------------*
    I         SCALAR          I
    I     LABEL VARIABLE      I
    *-------------------------*
    I SET AT   TO GO TO       I
    I    3.14      1.20       I
    I COMPOSIT STEPS          I
    I    3.19      4.02       I
    I [illegible] PAGE_HEX    I
    I    4.11      8.19       I
    I 00000408 WRTLOST        I
    *-------------------------*
```

```
09/26/74                                   AUTOFLOW CHART SET -                                        PAGE 11

CHART TITLE - GET/PUT, FORMAT STATEMENTS



00000141 FMT0      FORMAT (SKIP (0),A (95))
00000143 FMT1      FORMAT (SKIP (1),A (95))
00000146 FMT2      FORMAT (SKIP (1),A (27),3 (X (2),F (5,1),X (5),F (8,3),X (3),F (8,3),X (3)))
00000151 FMT3      FORMAT (SKIP (1),A (27),3 (X (2),F (3),X (7),F (8,3),X (3),F (8,3),X (3)))
00000156 FMT4      FORMAT (SKIP (1),A (27),3 (X (4),F (1),X (7),F (8,3),X (3),F (8,3),X (3)))
00000161 FMT5      FORMAT (SKIP (1),A (27),3 (X (3),F (4,1),X (5),F (8,3),X (3),F (8,3),X (3)))
00000164 FMT6      FORMAT (SKIP (1),A (27),3 (X (3),F (2),X (7),F (8,3),X (3),F (8,3),X (3)))
00000171 FMT7      FORMAT (SKIP (1),A (27),3 (X (4),F (3,1),X (5),F (8,3),X (3),F (8,3),X (3)))
00000244            .GET/PUT 001  PUT FILE (RFAIL) EDIT ('SCHOOL = |',VSCOL,'|   ',SCOLTTL) (SKIP (3),X (10),A,A (1),A,A (30))
00000398            .GET/PUT 002  PUT FILE (RFAIL) EDIT ('COURSE: ',FCOURSE,'   FAILURE RATE: ',FRATE) (SKIP (1),X (20),A,
00000401                           A (4),A,A (11))
00000409            .GET/PUT 003  PUT EDIT ('R               SCHOOL NAME: ',SCOLTTL,'E              SCHOOL CODE: ',OLDSCODE,
00000413                           'F') (PAGE,A,A (30),SKIP (1),A,A (1),SKIP (1),A)
00000418            .GET/PUT 004  PUT EDIT (LA,LB) (SKIP (1),A (130),SKIP (1),A (95))
00000423            .GET/PUT 005  PUT EDIT (TTL (1),(COURSE (K) DO K = 1 TO NC)) (SKIP (1),A (27),3 (X (2),A (4),X (28)))
00000427            .GET/PUT 006  PUT EDIT (LB,LB) (SKIP (0),A (95),SKIP (1),A (95))
00000447            .GET/PUT 007  PUT FDIT (LC) (SKIP (1),A (120))
00000452            .GET/PUT 008  PUT EDIT (TTL (J),C1V (J),C1C (J),C1P (J)) (R (FSELECT (J)))
00000457            .GET/PUT 009  PUT EDIT (TTL (J),C1V (J),C1C (J),C1P (J),C2V (J),C2C (J),C2P (J)) (R (FSELECT (J)))
00000463            .GET/PUT 010  PUT EDIT (TTL (J),C1V (J),C1C (J),C1P (J),C2V (J),C2C (J),C2P (J),C3V (J),C3C (J),
00000467                           C3P (J)) (R (FSELECT (J)))
00000470            .GET/PUT 011  PUT EDIT (LC) (SKIP (0),A (120))
00000483            .GET/PUT 012  PUT EDIT (LC,LD,LC) (SKIP (1),A (120),SKIP (1),A (130),SKIP (1),A (120))
00000495            .GET/PUT 013  PUT EDIT (LC,LD,LE) (SKIP (1),A (120),SKIP (1),A (130T,SKIP (1),A (95))
00000501            .GET/PUT 014  PUT EDIT ('         COLUMN PRODUCT SUM:',(PSUM (K) DO K = 1 TO NC)) (SKIP (1),A,X (20),F (11,
00000504                           3),X (23),F (11,3),X (23),F (11,3))
00000507            .GET/PUT 015  PUT EDIT (LE,LE,LD,LE) (SKIP (0),A (95),SKIP (1),A (95),SKIP (1),A (130),SKIP (1),A (95))
00000514            .GET/PUT 016  PUT EDIT ('                 COEFFICIENT OF',LE) (SKIP (1),A,SKIP (0),A (95))
00000519            .GET/PUT 017  PUT EDIT ('                       ADJUSTMENT:',(DCOPB (K) DO K = 1 TO NC)) (SKIP (1),A,X (23),F (8,
00000522                           3),X (26),F (8,3),X (26),F (8,3))
00000525            .GET/PUT 018  PUT EDIT (LE,LE,LD,LE) (SKIP (0),A (95),SKIP (1),A (95),SKIP (1),A (130),SKIP (1),A (95))
00000532            .GET/PUT 019  PUT EDIT ('      COMPUTED FAILURE RATE:',(CFAIL (K) DO K = 1 TO NC)) (SKIP (1),A,X (23),F (8,
00000535                           3),X (26),F (8,3),X (26),F (8,3))
00000538            .GET/PUT 020  PUT FUIT (LE,LE) (SKIP (0),A (95),SKIP (1),A (95))
00000543            .GET/PUT 021  PUT EDIT ((MSGL1 (K) DO K = 1 TO NC)) (SKIP (1),X (29),A (29),X (5),A (29),X (5),A (29))
00000548            .GET/PUT 022  PUT EDIT (LF) (SKIP (0),A (95))
00000551            .GET/PUT 023  PUT EDIT ((MSGL2 (K) DO K = 1 TO NC)) (SKIP (1),X (29),A (29),X (5),A (29),X (5),A (29))
00000556            .GET/PUT 024  PUT EDIT (LE) (SKIP (0),A (95))
00000585            .GET/PUT 025  PUT PAGE
00000586            .GET/PUT 026  PUT DATA (NV,NC,NF,NVS,NCS,CEOF,VEOF) SKIP (5)
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TPF MODEL FLOWCHARTS

The following pages contain the flowcharts for the TPF model.

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AUTOFLOW CHART SET -

09/23/74

CHART TITLE - PROCEDURES

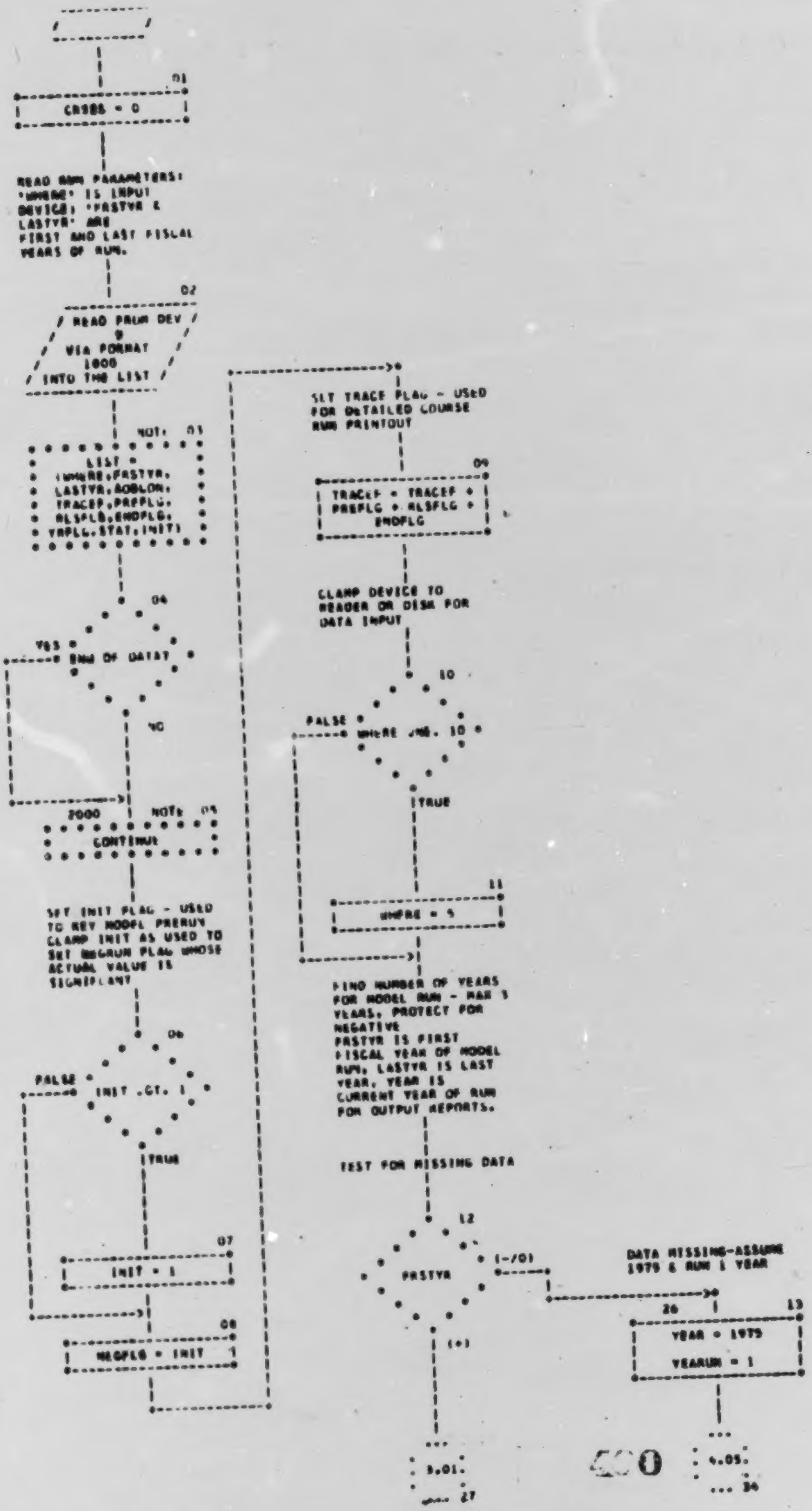

01
CASES = 0
READ RUN PARAMETERS: 'WHERE' IS INPUT DEVICE; 'FRSTYR & LASTYR' ARE FIRST AND LAST FISCAL YEARS OF RUN.
02
READ FRUM DEV 9 VIA FORMAT 1000 INTO THE LIST
NOTE 03
LIST = (WHERE,FRSTYR, LASTYR,AOBLON, TRACEF,PREFLG, RLSFLG,ENDFLG, YRFLG,STAT,INIT)
04
END OF DATA?
YES
NO
2000
NOTE 05
CONTINUE
SET INIT FLAG - USED TO KEY MODEL PRERUN CLAMP INIT AS USED TO SET NEGRUN FLAG WHOSE ACTUAL VALUE IS SIGNIFICANT
06
INIT .GT. 1
FALSE
TRUE
07
INIT = 1
08
NEGFLG = INIT
SET TRACE FLAG - USED FOR DETAILED COURSE RUN PRINTOUT
09
TRACEF = TRACEF + PREFLG + RLSFLG + ENDFLG
CLAMP DEVICE TO READER OR DISK FOR DATA INPUT
10
WHERE .NE. 10
FALSE
TRUE
11
WHERE = 5
FIND NUMBER OF YEARS FOR MODEL RUN - MAX 3 YEARS, PROTECT FOR NEGATIVE FRSTYR IS FIRST FISCAL YEAR OF MODEL RUN, LASTYR IS LAST YEAR, YEAR IS CURRENT YEAR OF RUN FOR OUTPUT REPORTS.
TEST FOR MISSING DATA
12
FRSTYR
(-/0)
(+)
DATA MISSING-ASSUME 1975 & RUN 1 YEAR
26
13
YEAR = 1975
YEARUN = 1
3.01
27
4.05
34

CHART TITLE - PROCEDURES

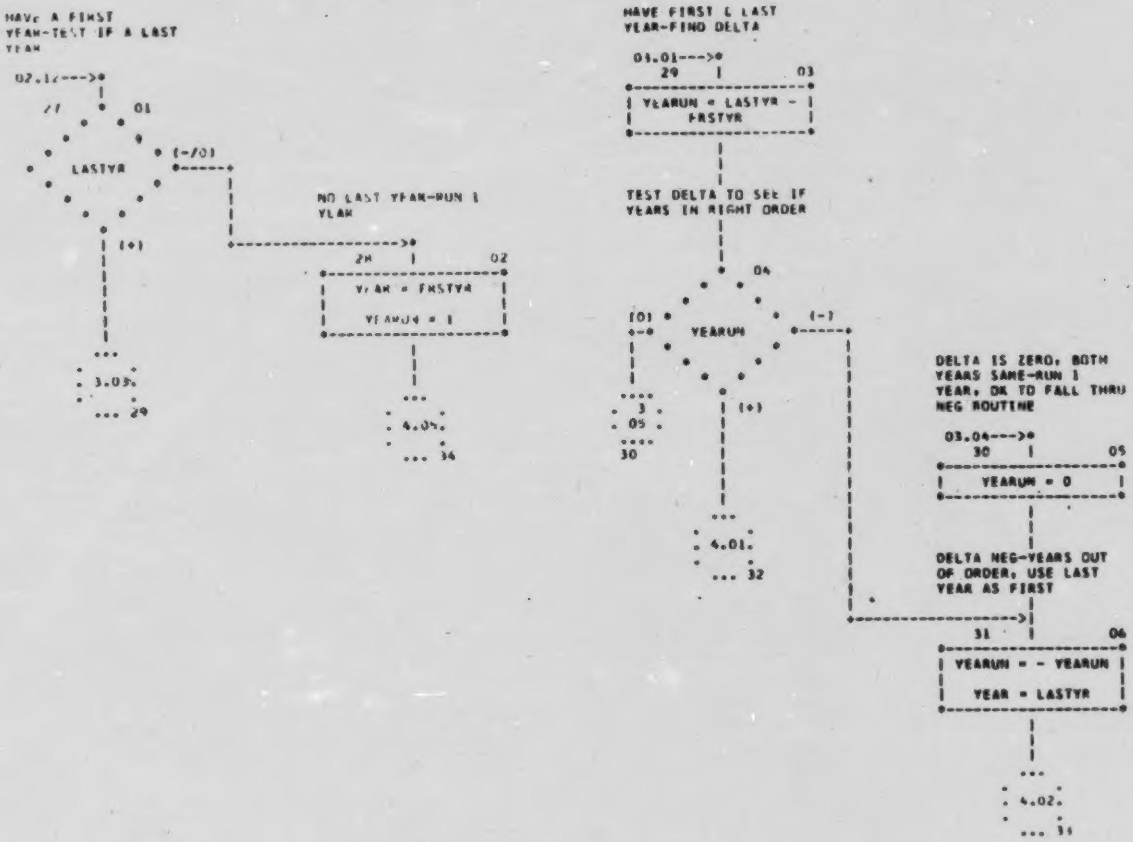

HAVE A FIRST YEAR-TEST IF A LAST YEAR
02.12--->
27
01
LASTYR
(-/0)
(+)
3.05
29
NO LAST YEAR-RUN 1 YEAR
28
02
YEAR = FRSTYR
YEARUN = 1
4.05
34
HAVE FIRST & LAST YEAR-FIND DELTA
03.01--->
29
03
YEARUN = LASTYR - FRSTYR
TEST DELTA TO SEE IF YEARS IN RIGHT ORDER
04
(0)
YEARUN
(-)
3
05
30
(+)
4.01
32
DELTA IS ZERO, BOTH YEARS SAME-RUN 1 YEAR, OK TO FALL THRU NEG ROUTINE
03.04--->
30
05
YEARUN = 0
DELTA NEG-YEARS OUT OF ORDER, USE LAST YEAR AS FIRST
31
06
YEARUN = - YEARUN
YEAR = LASTYR
4.02
31

CHART TITLE - PROCEDURES

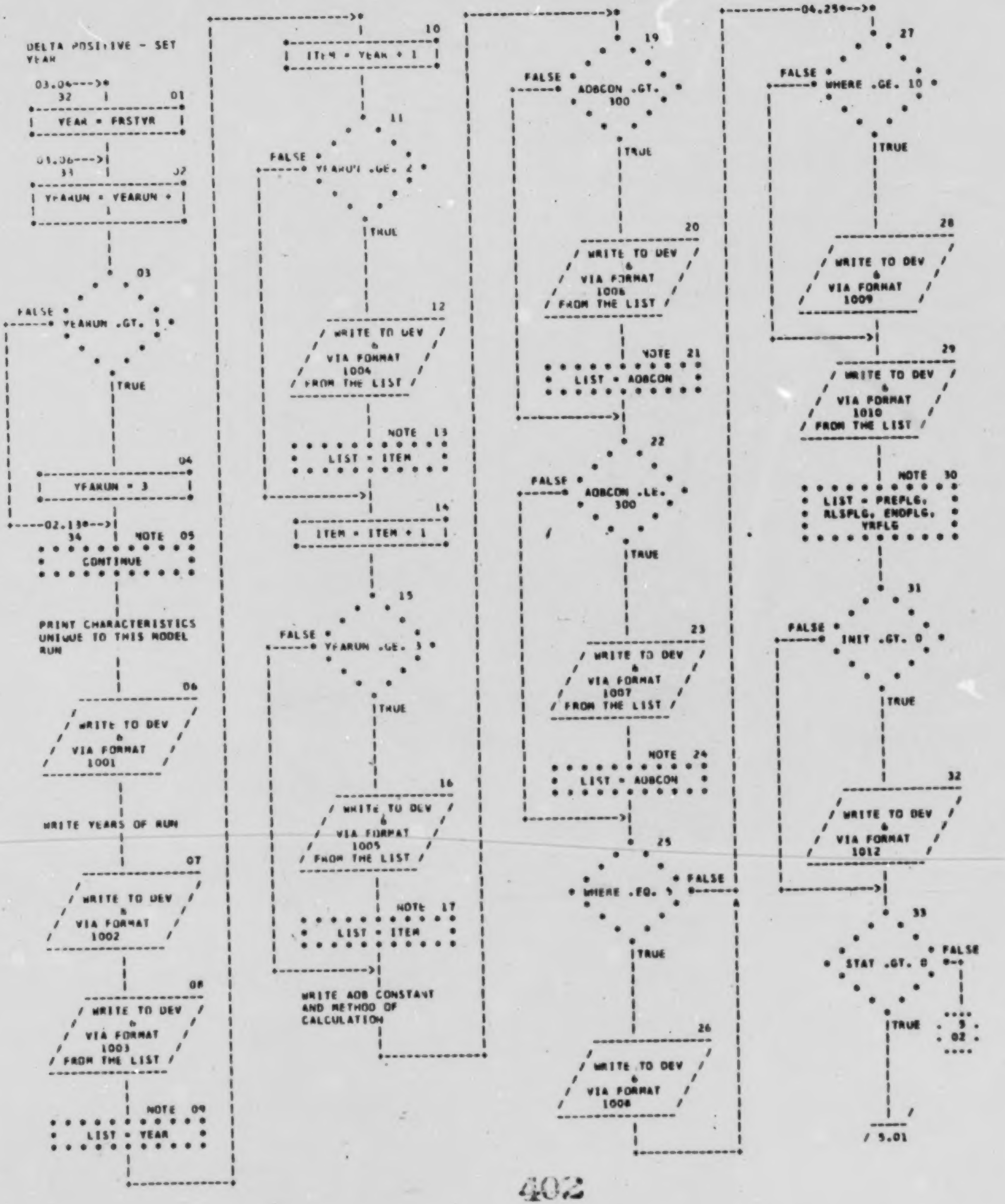

DELTA POSITIVE - SET YEAR
03.04--->
32
01
YEAR = FRSTYR
03.06--->
33
02
YEARUN = YEARUN + 1
03
FALSE
YEARUN .GT. 3
TRUE
04
YEARUN = 3
02.13--->
34
NOTE 05
CONTINUE
PRINT CHARACTERISTICS UNIQUE TO THIS MODEL RUN
06
WRITE TO DEV 6 VIA FORMAT 1001
WRITE YEARS OF RUN
07
WRITE TO DEV 6 VIA FORMAT 1002
08
WRITE TO DEV 6 VIA FORMAT 1003 FROM THE LIST
NOTE 09
LIST = YEAR
10
ITEM = YEAR + 1
11
FALSE
YEARUN .GE. 2
TRUE
12
WRITE TO DEV 6 VIA FORMAT 1004 FROM THE LIST
NOTE 13
LIST = ITEM
14
ITEM = ITEM + 1
15
FALSE
YEARUN .GE. 3
TRUE
16
WRITE TO DEV 6 VIA FORMAT 1005 FROM THE LIST
NOTE 17
LIST = ITEM
WRITE AOB CONSTANT AND METHOD OF CALCULATION
19
FALSE
AOBCON .GT. 300
TRUE
20
WRITE TO DEV 6 VIA FORMAT 1006 FROM THE LIST
NOTE 21
LIST = AOBCON
22
FALSE
AOBCON .LE. 300
TRUE
23
WRITE TO DEV 6 VIA FORMAT 1007 FROM THE LIST
NOTE 24
LIST = AOBCON
25
WHERE .EQ. 5
FALSE
TRUE
26
WRITE TO DEV 6 VIA FORMAT 1008
04.25--->
27
FALSE
WHERE .GE. 10
TRUE
28
WRITE TO DEV 6 VIA FORMAT 1009
29
WRITE TO DEV 6 VIA FORMAT 1010 FROM THE LIST
NOTE 30
LIST = PREPLG, RLSPLG, ENDPLG, YRFLG
31
FALSE
INIT .GT. 0
TRUE
32
WRITE TO DEV 6 VIA FORMAT 1012
33
STAT .GT. 0
FALSE
5 02
TRUE
5.01

CHART TITLE - PROCEDURES

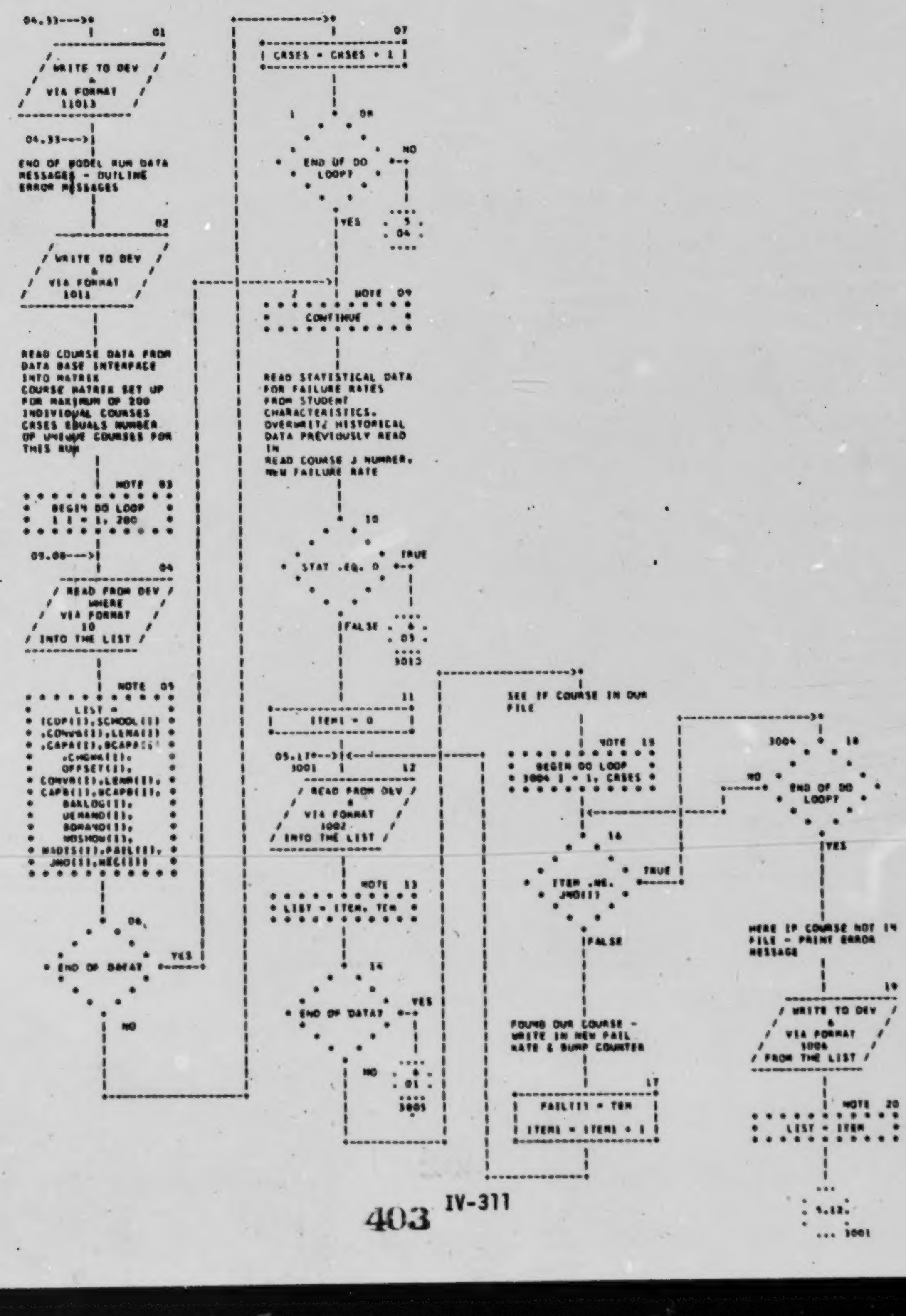
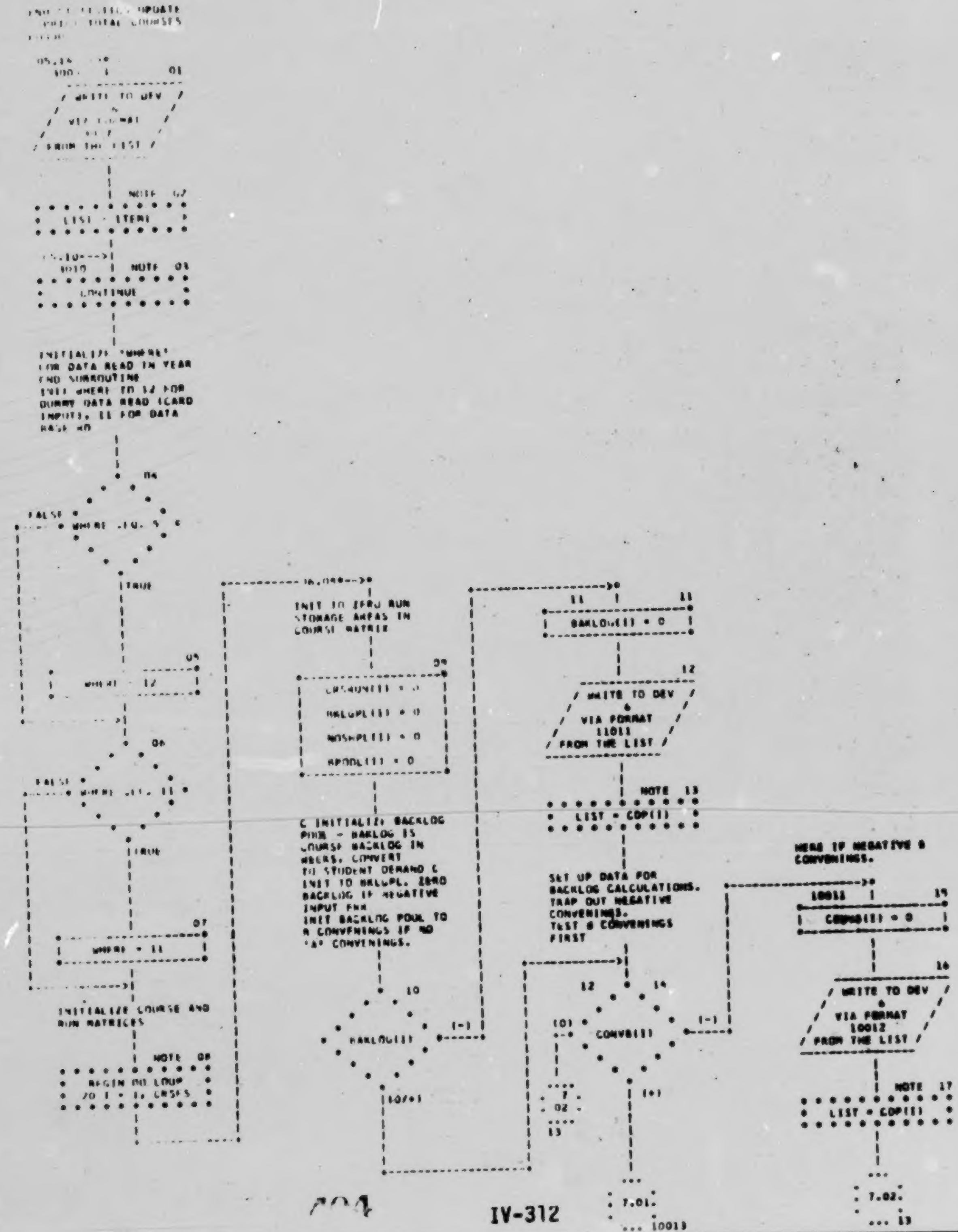

04.33--->
01
WRITE TO DEV
6
VIA FORMAT
11013
04.33--->
END OF MODEL RUN DATA
MESSAGES - OUTLINE
ERROR MESSAGES
02
WRITE TO DEV
6
VIA FORMAT
1011
READ COURSE DATA FROM
DATA BASE INTERFACE
INTO MATRIX
COURSE MATRIX SET UP
FOR MAXIMUM OF 200
INDIVIDUAL COURSES
CRSES EQUALS NUMBER
OF UNIQUE COURSES FOR
THIS RUN
NOTE 03
BEGIN DO LOOP
1 I = 1, 200
05.08--->
04
READ FROM DEV
WHERE
VIA FORMAT
10
INTO THE LIST
NOTE 05
LIST =
(COP(I),SCHOOL(I)
,CONVA(I),LENA(I)
,CAPA(I),BCAPA(I)
,CHGWA(I),
OFFSET(I),
CONVB(I),LENB(I),
CAPB(I),UCAPB(I),
BARLOG(I),
UEMAND(I),
BDMAND(I),
NOSHOW(I),
NADIS(I),FAIL(I),
JNO(I),NEG(I))
06
END OF DATA?
YES
NO
07
CRSES = CRSES + 1
1
08
END OF DO
LOOP?
NO
YES
5
04
2
NOTE 09
CONTINUE
READ STATISTICAL DATA
FOR FAILURE RATES
FROM STUDENT
CHARACTERISTICS.
OVERWRITE HISTORICAL
DATA PREVIOUSLY READ
IN
READ COURSE J NUMBER,
NEW FAILURE RATE
10
STAT .EQ. 0
TRUE
FALSE
6
03
1013
11
ITEM1 = 0
05.17--->
3001
12
READ FROM DEV
8
VIA FORMAT
1002
INTO THE LIST
NOTE 13
LIST = ITEM, TEM
14
END OF DATA?
YES
NO
4
01
3005
SEE IF COURSE IN OUR
FILE
NOTE 15
BEGIN DO LOOP
3004 J = 1, CRSES
16
ITEM .NE.
JNO(J)
TRUE
FALSE
FOUND OUR COURSE -
WRITE IN NEW FAIL
RATE & BUMP COUNTER
17
FAIL(J) = TEM
ITEM1 = ITEM1 + 1
3004
18
NO
END OF DO
LOOP?
YES
HERE IF COURSE NOT IN
FILE - PRINT ERROR
MESSAGE
19
WRITE TO DEV
6
VIA FORMAT
1004
FROM THE LIST
NOTE 20
LIST = ITEM
5.12.
3001

CHART TITLE - PROCEDURES



[illegible] UPDATE
[illegible] TOTAL COURSES
05.14
1000 01
WRITE TO DEV 6 VIA FORMAT [illegible] FROM THE LIST
NOTE 02
LIST - ITEM1
1010 NOTE 03
CONTINUE
INITIALIZE 'WHERE' FOR DATA READ IN YEAR END SUBROUTINE
INIT WHERE TO 12 FOR DUMMY DATA READ (CARD INPUT), 11 FOR DATA BASE RD
04
FALSE
WHERE .EQ. 5
TRUE
05
WHERE - 12
06
FALSE
WHERE .EQ. 11
TRUE
07
WHERE = 11
INITIALIZE COURSE AND RUN MATRICES
NOTE 08
BEGIN DO LOOP 20 I = 1, CRSES
16.09
INIT TO ZERO RUN STORAGE AREAS IN COURSE MATRIX
09
CRSRUN(I) = 0
BKLGPL(I) = 0
NOSHPL(I) = 0
APOOL(I) = 0
C INITIALIZE BACKLOG POOL - BAKLOG IS COURSE BACKLOG IN WEEKS. CONVERT TO STUDENT DEMAND & INIT TO BKLGPL. ZERO BACKLOG IF NEGATIVE INPUT FNR
INIT BACKLOG POOL TO A CONVENINGS IF NO 'A' CONVENINGS.
10
BAKLOG(I)
(-)
(0/+)
11
BAKLOG(I) = 0
12
WRITE TO DEV 6 VIA FORMAT 11011 FROM THE LIST
NOTE 13
LIST = COP(I)
SET UP DATA FOR BACKLOG CALCULATIONS. TRAP OUT NEGATIVE CONVENINGS. TEST B CONVENINGS FIRST
12
14
(0)
CONVB(I)
(-)
(+)
7
02
13
7.01
10013
HERE IF NEGATIVE B CONVENINGS.
10011
15
CONVB(I) = 0
16
WRITE TO DEV 6 VIA FORMAT 10012 FROM THE LIST
NOTE 17
LIST = COP(I)
7.02
13

404

CHART TITLE - PROCEDURES

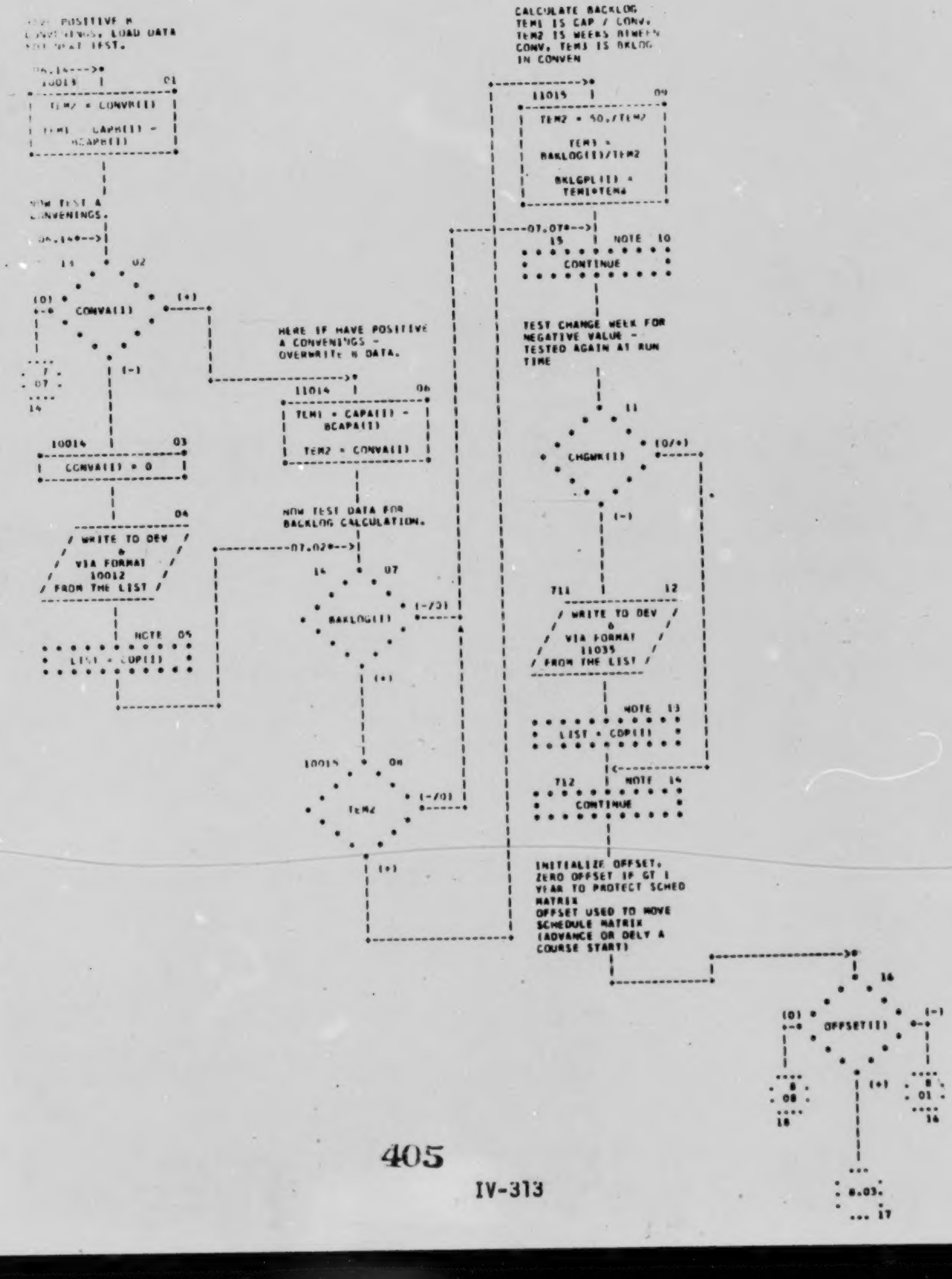

HAVE POSITIVE B
CONVENINGS, LOAD DATA
FOR NEXT TEST.
06.14--->
10013
01
TEM2 = CONVB(I)
TEM1 = CAPB(I) -
BCAPB(I)
NOW TEST A
CONVENINGS.
06.14*-->
14
02
(0)
CONVA(I)
(+)
(-)
07
14
10014
03
CONVA(I) = 0
04
/ WRITE TO DEV /
6
/ VIA FORMAT /
10012
/ FROM THE LIST /
NOTE 05
LIST = COP(I)
HERE IF HAVE POSITIVE
A CONVENINGS -
OVERWRITE B DATA.
11014
06
TEM1 = CAPA(I) -
BCAPA(I)
TEM2 = CONVA(I)
NOW TEST DATA FOR
BACKLOG CALCULATION.
07.02*-->
14
07
BAKLOG(I)
(-/0)
(+)
10015
08
TEM2
(-/0)
(+)
CALCULATE BACKLOG
TEM1 IS CAP / CONV.
TEM2 IS WEEKS BTWEEN
CONV, TEM3 IS BKLOG
IN CONVEN
11015
09
TEM2 = 50./TEM2
TEM3 =
BAKLOG(I)/TEM2
BKLGPL(I) =
TEM1*TEM4
07.07*-->
15
NOTE 10
CONTINUE
TEST CHANGE WEEK FOR
NEGATIVE VALUE -
TESTED AGAIN AT RUN
TIME
11
CHGWK(I)
(0/+)
(-)
711
12
/ WRITE TO DEV /
6
/ VIA FORMAT /
11035
/ FROM THE LIST /
NOTE 13
LIST = COP(I)
712
NOTE 14
CONTINUE
INITIALIZE OFFSET.
ZERO OFFSET IF GT 1
YEAR TO PROTECT SCHED
MATRIX
OFFSET USED TO MOVE
SCHEDULE MATRIX
(ADVANCE OR DELY A
COURSE START)
16
(0)
OFFSET(I)
(-)
(+)
8
08
18
8
01
14
8.03.
17

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CHART TITLE - PROCEDURES

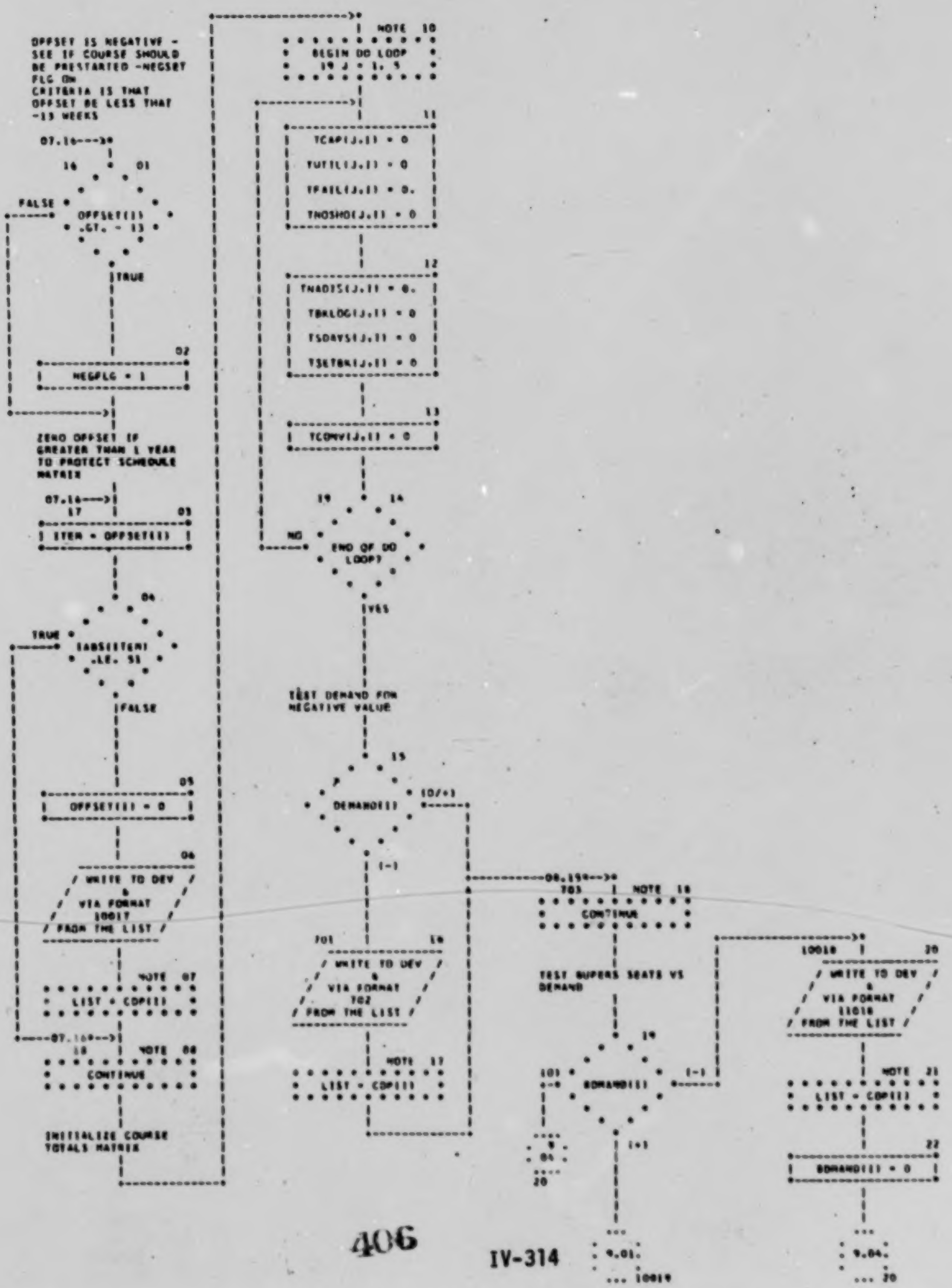

OFFSET IS NEGATIVE -
SEE IF COURSE SHOULD
BE PRESTARTED -NEGSET
FLG ON
CRITERIA IS THAT
OFFSET BE LESS THAT
-13 WEEKS
07.16
16
01
FALSE
OFFSET(I) .GT. - 13
TRUE
02
NEGFLG = 1
ZERO OFFSET IF
GREATER THAN 1 YEAR
TO PROTECT SCHEDULE
MATRIX
07.16
17
03
ITEM = OFFSET(I)
04
TRUE
IABS(ITEM) .LE. 53
FALSE
05
OFFSET(I) = 0
06
WRITE TO DEV & VIA FORMAT 10017 FROM THE LIST
NOTE 07
LIST = COP(I)
07.16
18
NOTE 08
CONTINUE
INITIALIZE COURSE
TOTALS MATRIX
NOTE 10
BEGIN DO LOOP
19 J = 1, 5
11
TCAP(J,I) = 0
TUTIL(J,I) = 0
TFAIL(J,I) = 0.
TNOSHO(J,I) = 0
12
TNADIS(J,I) = 0.
TBKLOG(J,I) = 0
TSDAYS(J,I) = 0
TSETBK(J,I) = 0
13
TCONV(J,I) = 0
19
14
NO
END OF DO LOOP?
YES
TEST DEMAND FOR
NEGATIVE VALUE
15
DEMAND(I)
(0/+)
(-)
701
16
WRITE TO DEV & VIA FORMAT 702 FROM THE LIST
NOTE 17
LIST = COP(I)
08.15
703
NOTE 18
CONTINUE
TEST SUPERS SEATS VS
DEMAND
19
(0)
SDMAND(I)
(-)
(+)
9.04
20
9.01
10019
10018
20
WRITE TO DEV & VIA FORMAT 11018 FROM THE LIST
NOTE 21
LIST = COP(I)
22
SDMAND(I) = 0
9.04
20

CHART TITLE - PROCEDURES

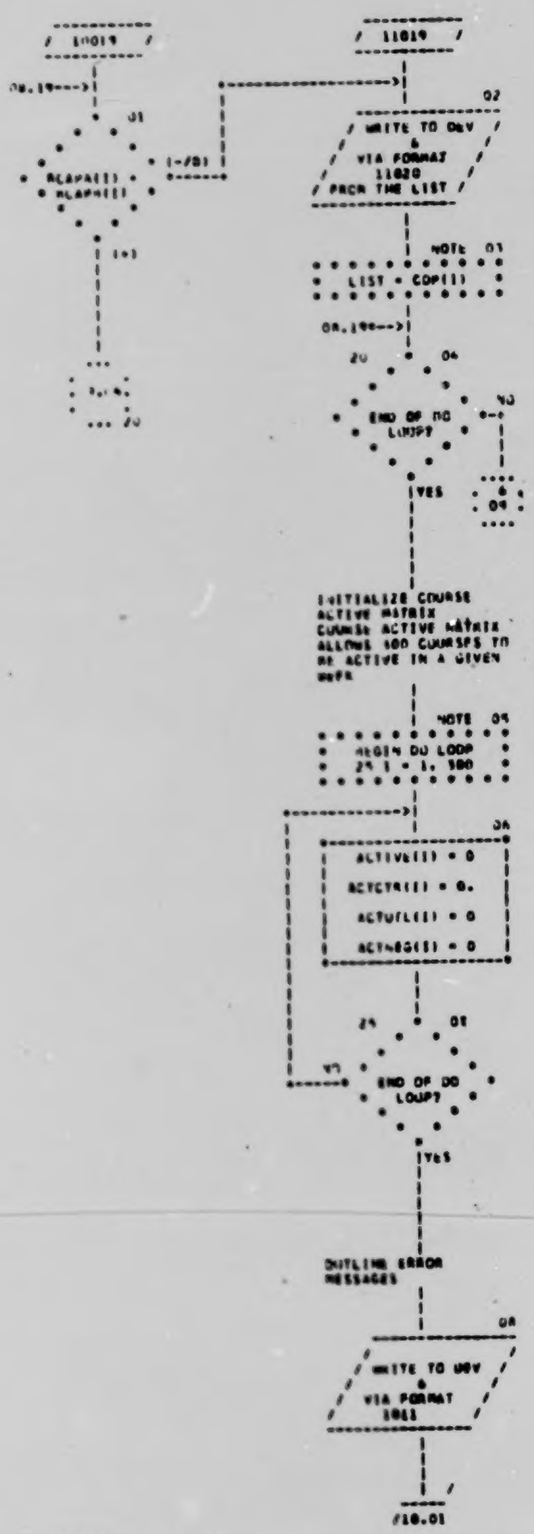

10019
11019
08.19--->
01
RLAPA(I) = RLAPH(I)
(-/0)
(+)
20
02
WRITE TO DEV 6 VIA FORMAT 11020 FROM THE LIST
NOTE 03
LIST = COP(I)
08.19--->
20
04
END OF DO LOOP?
NO
04
YES
INITIALIZE COURSE ACTIVE MATRIX COURSE ACTIVE MATRIX ALLOWS 100 COURSES TO BE ACTIVE IN A GIVEN WEEK
NOTE 05
BEGIN DO LOOP 25 I = 1, 100
06
ACTIVE(I) = 0
ACTCTR(I) = 0.
ACTUFL(I) = 0
ACTNEG(I) = 0
25
07
NO
END OF DO LOOP?
YES
OUTLINE ERROR MESSAGES
08
WRITE TO DEV 6 VIA FORMAT 1011
/10.01

CHART TITLE - PROCEDURES

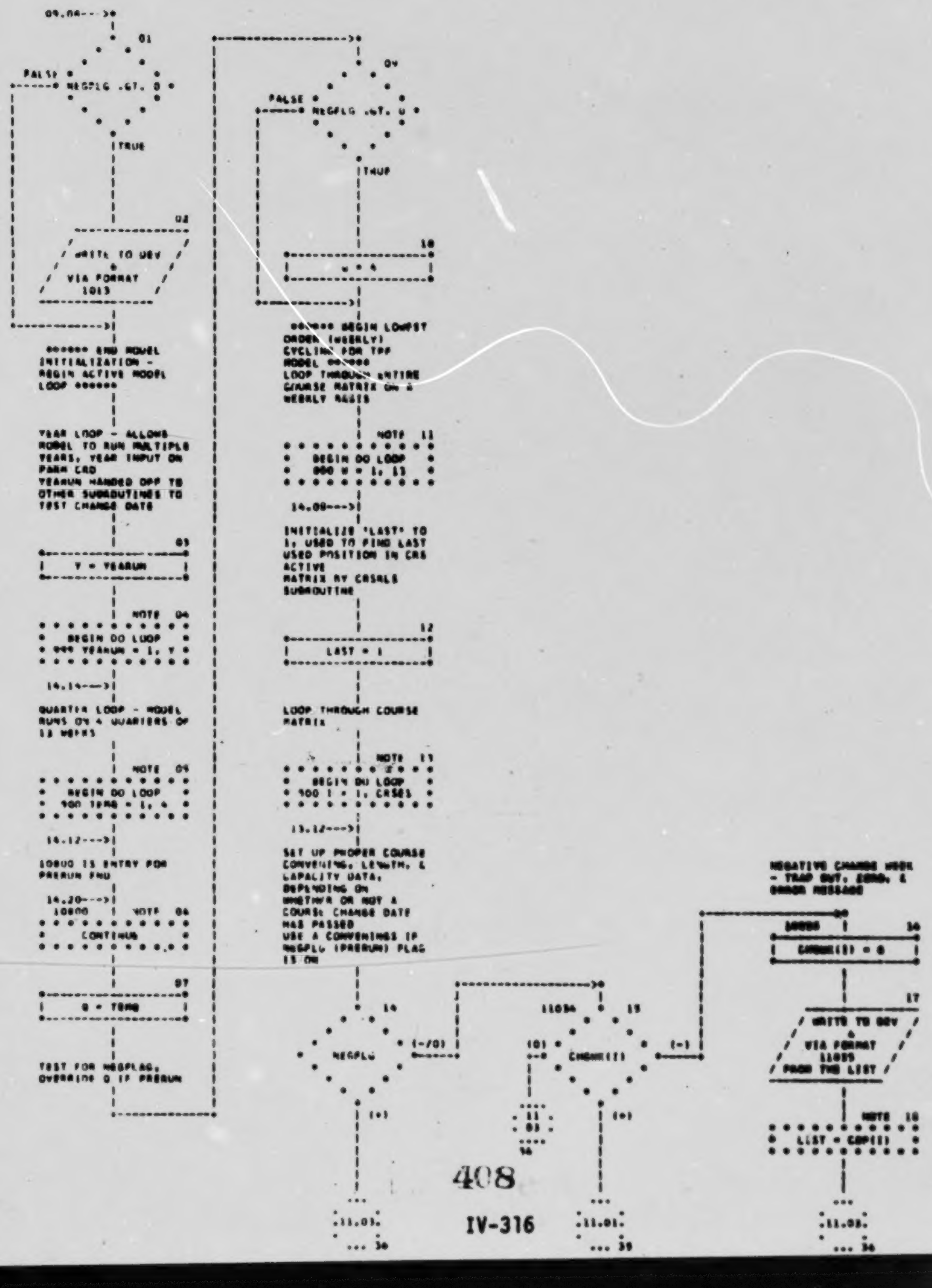
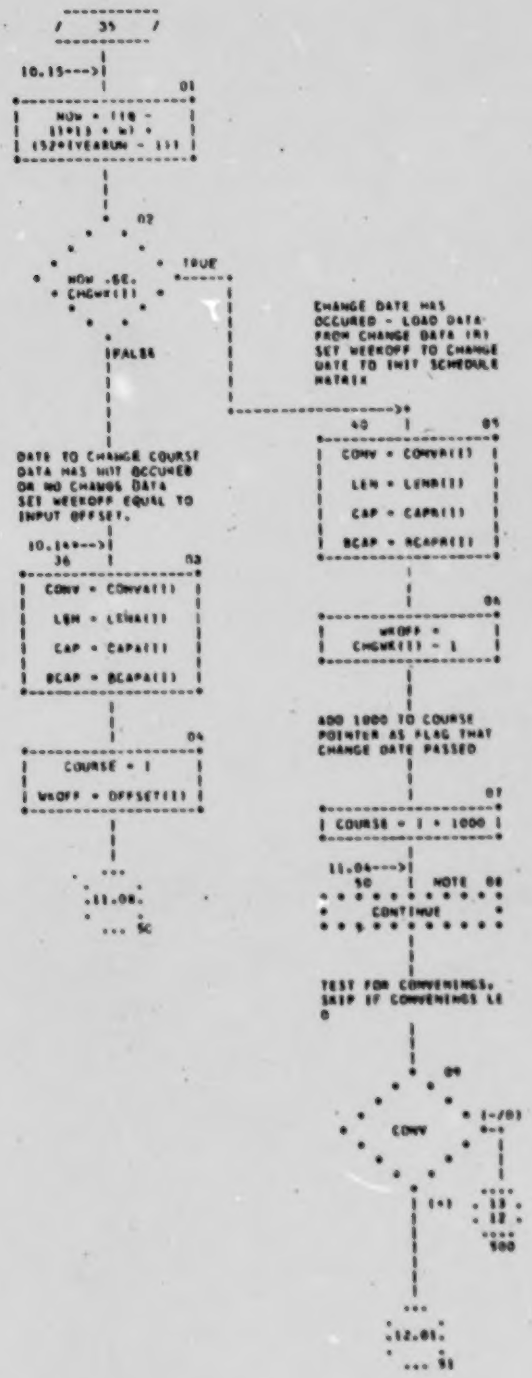

09.08---->
01
FALSE
NEGFLG .GT. 0
TRUE
02
WRITE TO DEV & VIA FORMAT 1013
****** END MODEL INITIALIZATION - BEGIN ACTIVE MODEL LOOP ******
YEAR LOOP - ALLOWS MODEL TO RUN MULTIPLE YEARS, YEAR INPUT ON PARM CRD
YEARUN HANDED OFF TO OTHER SUBROUTINES TO TEST CHANGE DATE
03
Y = YEARUN
NOTE 04
BEGIN DO LOOP 999 YEARUN = 1, Y
14.14---->
QUARTER LOOP - MODEL RUNS ON 4 QUARTERS OF 13 WEEKS
NOTE 05
BEGIN DO LOOP 900 TEMQ = 1, 4
14.12---->
10800 IS ENTRY FOR PRERUN END
14.20---->
10800
NOTE 06
CONTINUE
07
Q = TEMQ
TEST FOR NEGFLAG, OVERRIDE Q IF PRERUN
09
FALSE
NEGFLG .GT. 0
TRUE
10
W = 1
****** BEGIN LOWEST ORDER (WEEKLY) CYCLING FOR TPF MODEL ******
LOOP THROUGH ENTIRE COURSE MATRIX ON A WEEKLY BASIS
NOTE 11
BEGIN DO LOOP 800 W = 1, 13
14.08---->
INITIALIZE 'LAST' TO 1, USED TO FIND LAST USED POSITION IN CRS ACTIVE MATRIX BY CRSALS SUBROUTINE
12
LAST = 1
LOOP THROUGH COURSE MATRIX
NOTE 13
BEGIN DO LOOP 700 I = 1, CRSES
13.12---->
SET UP PROPER COURSE CONVENING, LENGTH, & CAPACITY DATA, DEPENDING ON WHETHER OR NOT A COURSE CHANGE DATE HAS PASSED
USE A CONVENINGS IF NEGFLG (PRERUN) FLAG IS ON
14
NEGFLG
(-/0)
(+)
11.03
36
11034
15
CHGWK(I)
(0)
(-)
(+)
11.03
36
11.01
39
NEGATIVE CHANGE WEEK - TRAP OUT, ZERO, & ERROR MESSAGE
10000
16
CHGWK(I) = 0
17
WRITE TO DEV & VIA FORMAT 11033 FROM THE LIST
NOTE 18
LIST = COP(I)
11.03
36

CHART TITLE - PROCEDURES


35
10.15--->
01
NOW = ((8 - 1)*13 + W) + (52*(YEARUN - 1))
02
NOW .GE. CHGWK(I)
TRUE
FALSE
10.14--->
36
03
CONV = CONVA(I)
LEN = LENA(I)
CAP = CAPA(I)
BCAP = BCAPA(I)
04
COURSE = I
WKOFF = OFFSET(I)
11.08
50
40
05
CONV = CONVR(I)
LEN = LENR(I)
CAP = CAPR(I)
BCAP = BCAPR(I)
06
WKOFF = CHGWK(I) - 1
07
COURSE = I + 1000
11.04--->
50
NOTE 08
CONTINUE
09
CONV
(-/0)
(+)
11
12
500
12.01
51

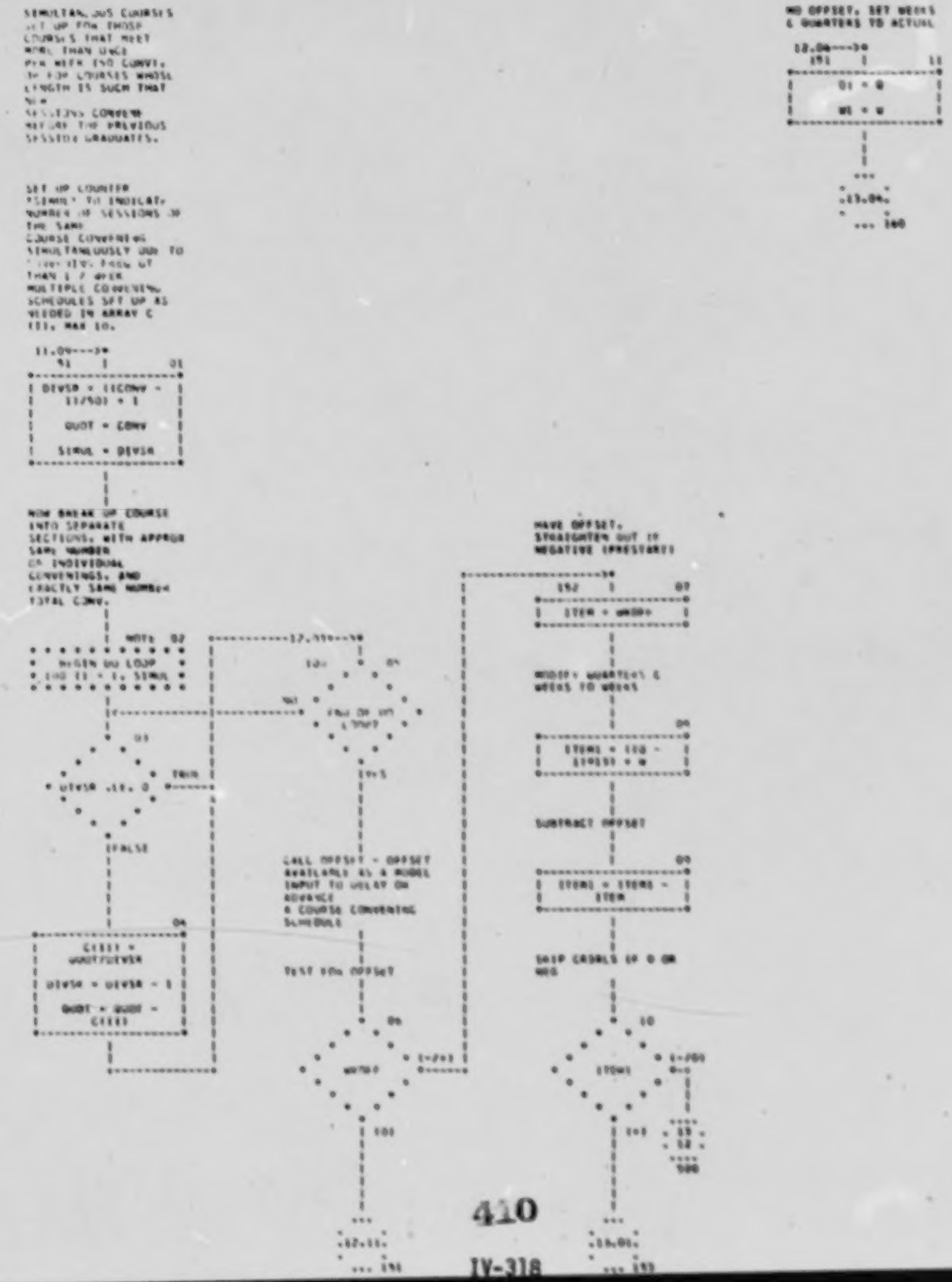
CHANGE DATE HAS OCCURED - LOAD DATA FROM CHANGE DATA (R) SET WEEKOFF TO CHANGE DATE TO INIT SCHEDULE MATRIX

DATE TO CHANGE COURSE DATA HAS NOT OCCURED OR NO CHANGE DATA SET WEEKOFF EQUAL TO INPUT OFFSET.

ADD 1000 TO COURSE POINTER AS FLAG THAT CHANGE DATE PASSED

TEST FOR CONVENINGS. SKIP IF CONVENINGS LE 0

CHART TITLE - PROCEDURES


SIMULTANEOUS COURSES SET UP FOR THOSE COURSES THAT MEET MORE THAN ONCE PER WEEK (NO CONV). OR FOR COURSES WHOSE LENGTH IS SUCH THAT NEW SESSIONS CONVENE BEFORE THE PREVIOUS SESSION GRADUATES.
SET UP COUNTER 'SIMUL' TO INDICATE NUMBER OF SESSIONS OF THE SAME COURSE CONVENING SIMULTANEOUSLY DUE TO LENGTH. MULTIPLE CONVENING SCHEDULES SET UP AS NEEDED IN ARRAY C (I). MAX 10.
11.00
DIVSR = ((CONV - 1)/50) + 1
QUOT = CONV
SIMUL = DIVSR
NOW BREAK UP COURSE INTO SEPARATE SECTIONS, WITH APPROX SAME NUMBER OF INDIVIDUAL CONVENINGS, AND EXACTLY SAME NUMBER TOTAL CONV.
NOTE 02
BEGIN DO LOOP
DO 11 I = 1, SIMUL
DIVSR .LT. 0
TRUE
FALSE
C(I) = QUOT/DIVSR
DIVSR = DIVSR - 1
QUOT = QUOT - C(I)
12.00
END OF DO LOOP?
YES
NO
CALL OFFSET - OFFSET AVAILABLE AS A MODEL INPUT TO DELAY OR ADVANCE A COURSE CONVENING SCHEDULE
TEST FOR OFFSET
WOTOF
12.11
HAVE OFFSET. STRAIGHTEN OUT IF NEGATIVE (PRESTART)
ITEM = WKOFF
MODIFY QUARTERS & WEEKS TO WEEKS
ITEMS = (IQ - 1)*13 + W
SUBTRACT OFFSET
ITEMS = ITEMS - ITEM
SKIP CREDITS IF 0 OR NEG
ITEMS
13.00
NO OFFSET. SET WEEKS & QUARTERS TO ACTUAL
12.00
QI = Q
WI = W
13.00

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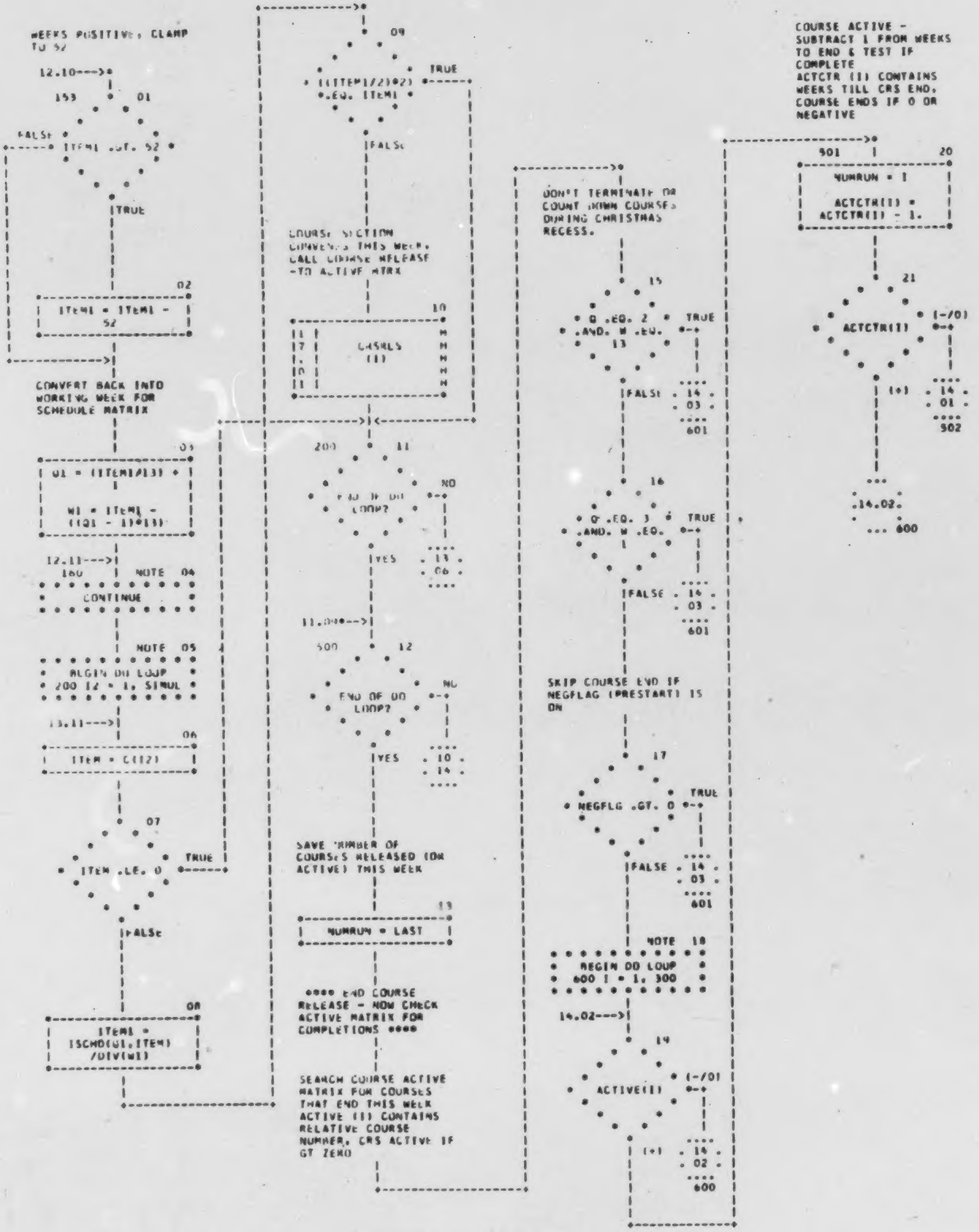
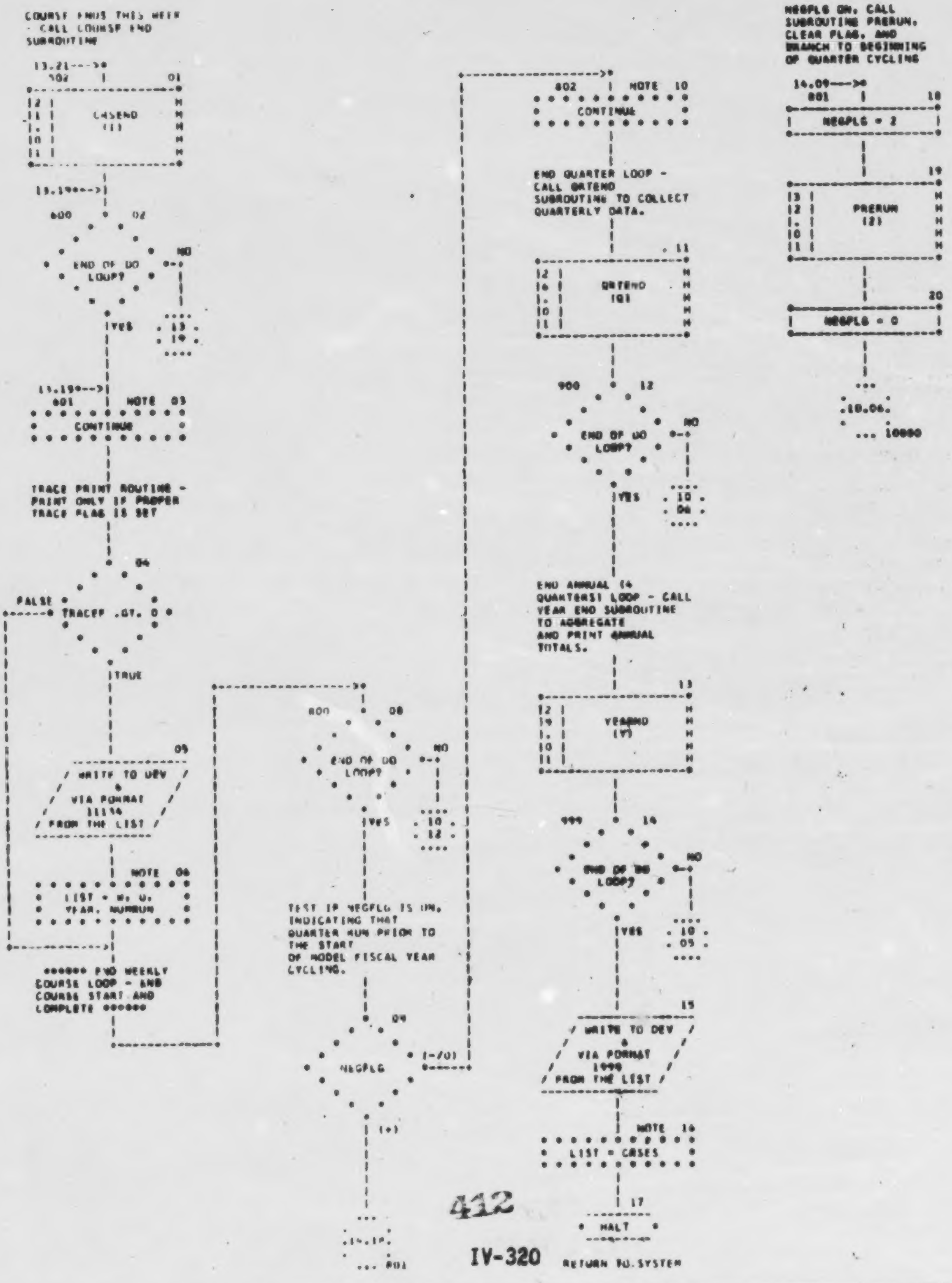
TAEG REPORT NO. 12-2

CHART TITLE - PROCEDURES



WEEKS POSITIVE, CLAMP TO 52
12.10--->
153
01
FALSE
ITEMI .GT. 52
TRUE
02
ITEMI = ITEMI - 52
CONVERT BACK INTO WORKING WEEK FOR SCHEDULE MATRIX
03
UI = (ITEMI/13) + 1
WI = ITEMI - ((UI - 1)*13)
12.11--->
160
NOTE 04
CONTINUE
NOTE 05
BEGIN DO LOOP 200 I2 = 1, SIMUL
13.11--->
06
ITEM = C(I2)
07
ITEM .LE. 0
TRUE
FALSE
08
ITEMI = ISCHD(UI,ITEM) /DIV(WI)
09
((ITEM/2)*2) .EQ. ITEM
TRUE
FALSE
COURSE SECTION CONVENES THIS WEEK. CALL COURSE RELEASE -TO ACTIVE MTRX
10
CRSRLS (I)
200
11
END OF DO LOOP?
NO
YES
13
06
11.04--->
500
12
END OF DO LOOP?
NO
YES
10
14
SAVE NUMBER OF COURSES RELEASED (ON ACTIVE) THIS WEEK
13
NUMRUN = LAST
**** END COURSE RELEASE - NOW CHECK ACTIVE MATRIX FOR COMPLETIONS ****
SEARCH COURSE ACTIVE MATRIX FOR COURSES THAT END THIS WEEK ACTIVE (I) CONTAINS RELATIVE COURSE NUMBER, CRS ACTIVE IF GT ZERO
DON'T TERMINATE OR COUNT DOWN COURSES DURING CHRISTMAS RECESS.
15
Q .EQ. 2 .AND. W .EQ. 13
TRUE
FALSE
14
03
601
16
Q .EQ. 3 .AND. W .EQ. 1
TRUE
FALSE
14
03
601
SKIP COURSE END IF NEGFLAG (PRESTART) IS ON
17
NEGFLG .GT. 0
TRUE
FALSE
14
03
601
NOTE 18
BEGIN DO LOOP 600 I = 1, 300
14.02--->
19
ACTIVE(I)
(-/0)
(+)
14
02
600
COURSE ACTIVE - SUBTRACT 1 FROM WEEKS TO END & TEST IF COMPLETE ACTCTR (I) CONTAINS WEEKS TILL CRS END. COURSE ENDS IF 0 OR NEGATIVE
501
20
NUMRUN = I
ACTCTR(I) = ACTCTR(I) - 1.
21
ACTCTR(I)
(-/0)
(+)
14
01
502
14.02.
600

CHART TITLE - PROCEDURES


COURSE ENDS THIS WEEK - CALL COURSE END SUBROUTINE
13.21--->
502
01
CASEND (1)
13.19--->
600
02
END OF DO LOOP?
NO
YES
13.19
13.19--->
601
NOTE 03
CONTINUE
TRACE PRINT ROUTINE - PRINT ONLY IF PROPER TRACE FLAG IS SET
04
FALSE
TRACEF .GT. 0
TRUE
05
WRITE TO DEV 6 VIA FORMAT 11134 FROM THE LIST
NOTE 06
LIST = W, U, YEAR, NUMRUN
****** END WEEKLY COURSE LOOP - END COURSE START AND COMPLETE ******
800
08
END OF DO LOOP?
NO
YES
10.12
TEST IF NEGFLG IS ON, INDICATING THAT QUARTER RUN PRIOR TO THE START OF MODEL FISCAL YEAR CYCLING.
09
NEGFLG
(-/0)
(+)
14.18
801
802
NOTE 10
CONTINUE
END QUARTER LOOP - CALL QRTEND SUBROUTINE TO COLLECT QUARTERLY DATA.
11
QRTEND (Q)
900
12
END OF DO LOOP?
NO
YES
10.06
END ANNUAL (4 QUARTERS) LOOP - CALL YEAR END SUBROUTINE TO AGGREGATE AND PRINT ANNUAL TOTALS.
13
YEAREND (Y)
999
14
END OF DO LOOP?
NO
YES
10.05
15
WRITE TO DEV 6 VIA FORMAT 1999 FROM THE LIST
NOTE 16
LIST = CASES
17
HALT
RETURN TO SYSTEM
NEGFLG ON, CALL SUBROUTINE PRERUN, CLEAR FLAG, AND BRANCH TO BEGINNING OF QUARTER CYCLING
14.09--->
801
18
NEGFLG = 2
19
PRERUN (2)
20
NEGFLG = 0
10.06
10000

412

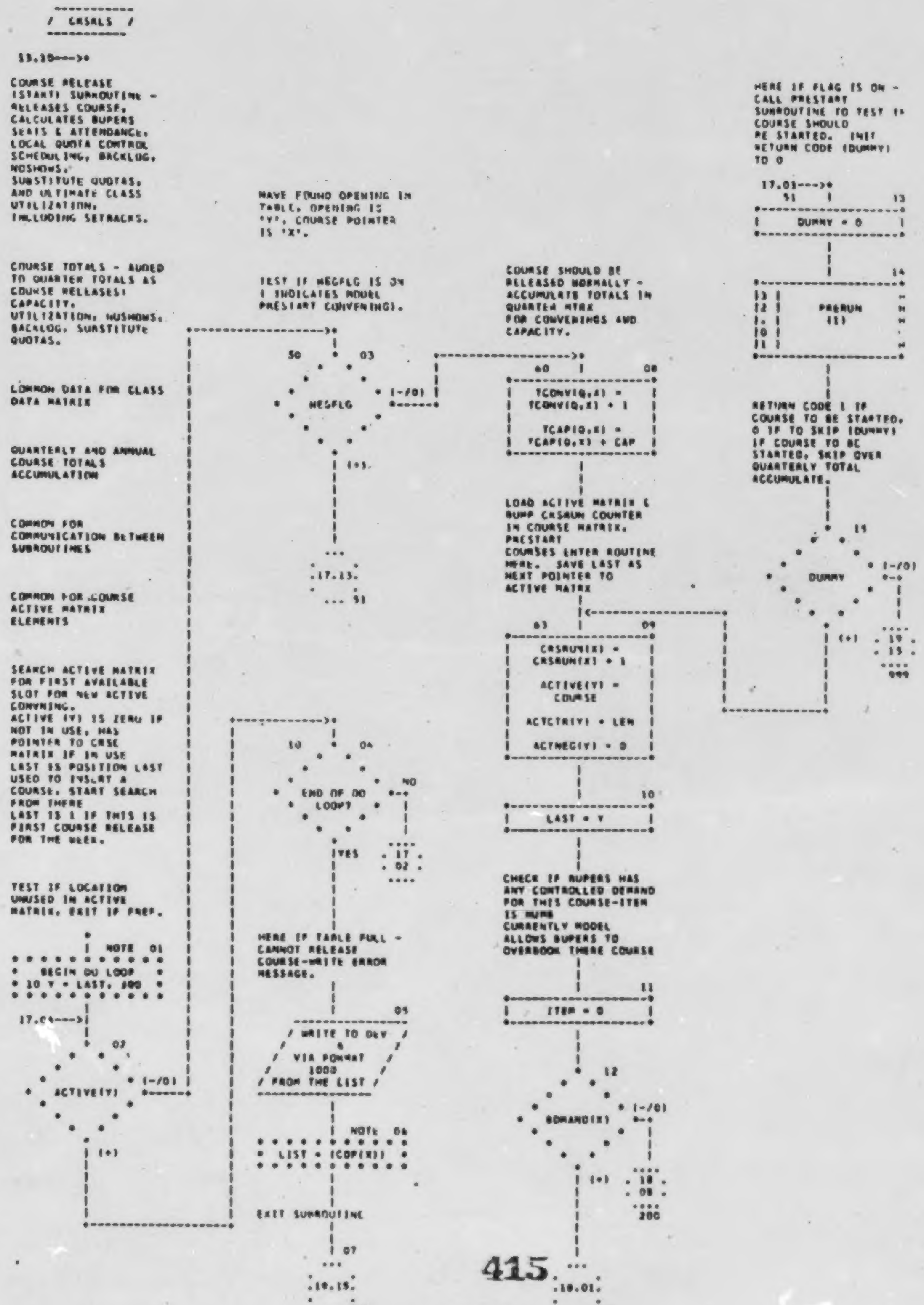
CHART TITLE - NON-PROCEDURAL STATEMENTS

```
IMPLICIT INTEGER*2 (A-Z,$)
REAL*4 BKLGPL
REAL*4 NOSHPL, BPOOL, NADIS, FAIL
REAL*4 ACTCTR, TFAIL, TNADIS
REAL*4 LEN, LENA, LENB
REAL*4 TEM, TEM1, TEM2, TEM3, TEM4, TEM5
REAL*4 NOSHOW
REAL*8 SCHOOL
INTEGER*4 WHERE
INTEGER*4 CDP, JNO
INTEGER*4 NEC
INTEGER*4 TSDAYS
INTEGER*4 ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
INTEGER*4 TCAP, TUTIL, TPASS
COMMON CDP (200), SCHOOL (200), CRSNUM (200), CONVA (200)
COMMON LENA (200), CAPA (200), RCAPA (200), OFFSET (200)
COMMON CHGNR (200), CONVB (200), LENB (200), CAPB (200)
COMMON RCAPB (200), NEC (200), BAKLOG (200), NOSHOW (200)
COMMON BKLGPL (200), NOSHPL (200), DEMAND (200), RDMAND (200)
COMMON BPOOL (200), FAIL (200), NADIS (200), JNO (200)
COMMON TCAP (5, 200), TUTIL (5, 200), TSETRK (5, 200)
COMMON TSDAYS (5, 200), TFAIL (5, 200), TNOSHO (5, 200)
COMMON TNADIS (5, 200), TBKLOG (5, 200), TCONV (5, 200)
COMMON DUMMY
COMMON CONV, LEN, CAP, RCAP, LAST, COURSE
COMMON TEM, TEM1, TEM2, TEM3, TEM4, TEM5
COMMON ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
COMMON YEAR, CRSES, G, W
COMMON WKOFF, INIT, WHERE
COMMON NEGFLG, ADRCON
COMMON TRACEF, RLSFLG, ENDFLG, PREFLG, YRFLG, YEARUN
COMMON ACTIVE (300), ACTCTR (300), ACTUTL (300), ACTNEG (300)
DIMENSION C (13), ISCHD (4, 50), DIV (13)
DATA ISCHD/Z1000,3*Z0,Z1000,Z0,Z800,Z0,Z1000,Z100,Z4,Z0,2*Z1000,
Z400,Z1000,Z1004,Z20,Z40,Z200,Z1008,Z100,Z804,Z80,Z810,Z408,Z81,
Z40,Z1020,Z1040,Z810,Z820,Z841,2*Z104,Z410,Z1084,Z420,Z842,Z210,
Z1084,Z444,Z109,2*Z808,Z1110,Z844,Z888,Z889,Z222,Z112,Z444,Z1112,
Z488,Z489,Z244,Z1224,Z1124,Z248,Z1244,Z1224,Z1248,Z892,Z924,Z925,
Z492,Z249,Z442,Z1249,Z4A4,Z492,ZA4A,ZA8A,ZA92,Z252,ZA49,Z1294,
Z14A4,Z94A,ZA52,ZA95,Z54A,Z4A5,Z952,ZA95,Z554,Z555,Z52A,2*ZAAA,
Z1AA,2*ZAAA,Z1554,Z555,ZAAA,Z1555,ZAAA,Z555,ZAAA,Z1AAA,Z1554,ZAAA,
Z1555,Z1AAA,Z156A,ZA95,ZAAA,Z156A,Z1AAA,ZAAA,Z1AD5,Z156A,Z1AB4,
Z65A,Z16AD,ZDAB,Z65A,ZAB5,Z15AD,Z15B5,Z15AC,ZDAD,Z15B6,ZD6A,Z1B5A,
ZAAD,Z15A6,Z16DA,Z1B6C,ZDB6,Z1BAD,ZDDB,ZDB6,Z76D,Z16DB,ZDDB,ZEDA,
ZDB7,ZDBB,ZEED,Z1B76,ZB76,Z1DBB,Z1776,Z1DDC,Z6ED,Z1DBB,Z1777,ZEEE,
Z7BB,Z1777,ZF7B,Z1BBA,ZEF7,Z1777,ZF7B,Z1BDE,Z7BD,Z1DEF,Z17BE,
Z1EFA,ZCFB,Z1BFF,ZFDF,ZFBE,Z7EF,Z17DF,Z17EF,Z1BF6,ZF7E,Z1FBF,ZFF7,
```

CHART TITLE - NON-PROCEDURAL STATEMENTS

```
         Z1EFE,ZF78,Z1F7F,ZFF8,Z1FDE,ZFBF,Z1DFF,ZFFF,ZFFE,Z7FF,2*ZFFF,
         Z1EFE,ZFF8,Z1FFF,ZFFF,Z1FFE,Z7FF,Z1FFF,ZFFF,Z1FFE,ZFFF,2*Z1FFF,
         Z1FFE,ZFFF,/1FFF/
         DATA DIV/4096,2048,1024,512,256,128,64,32,16,8,4,2,1/
1000     FORMAT (4I4, 5A4, 5I1, 1X, 2I1)
1001     FORMAT ('1BEGIN TRAINING PROCESS FLOW MODEL EXECUTION - CHARACTERI
         STICS FOR THIS RUN ARE:')
1002     FORMAT ('OFISCAL YEARS FOR MODEL RUN')
1003     FORMAT ('+', T32, I4)
1004     FORMAT ('+', T40, I4)
1005     FORMAT ('+', T48, I4)
1006     FORMAT ('OAVERAGE ON BOARD DAYS CONSTANT IS', I5, '  WEEKEND DAYS
         COUNTED IN STUDENT DAYS AND AOB CALCULATIONS')
1007     FORMAT ('OAVERAGE ON BOARD DAYS CONSTANT IS', I5, '  ONLY WORKING
         DAYS USED IN STUDENT DAYS AND AOB CALCULATIONS')
1008     FORMAT ('OCOURSE DATA INPUT DEVICE - READER;  COURSE NAMES INPUT
         - DUMMY;  STATISTICS INPUT DEVICE - READER')
1009     FORMAT ('OALL INPUTS THIS RUN FROM UNLOADED DATA BASE')
1010     FORMAT ('OTRACE PRINTOUT FLAGS THIS RUN     PRERUN ', I1, ';  REL
         EASE ', I1, ';  COURSE END ', I1, ';  ANNUAL PRINTOUT ', I1)
1012     FORMAT ('OINITIALIZATION FLAG IS SET - MODEL WILL INITIALIZE THOSE
          COURSES THAT ARE IN SESSION AT 1ST QUARTER START')
11013    FORMAT ('OSTAT FLAG IS SET - MODEL WILL READ PASS/FAIL DATA FROM S
         TATISTICS CURVES AND OVERRIDE HISTORICAL RATES')
1011     FORMAT ('0---------------------------------------------------------
         ---------------------------------------------------------------',//)
10       FORMAT (A4, A6, I3, F3.1, 3I2, I3, I3, F3.1, 2I3, I2, 2I5, 4X,
          2 F4.3, 1X, F4.3, 3X, 2 A6)
3002     FORMAT (A4, F4.1)
3006     FORMAT (' STATISTICS UPDATE ROUTINE - COURSE NOT IN FILE J NUMBER
         ', A4, '  FAILURE RATE', F5.1, '%')
3007     FORMAT ('STATISTICS UPDATE ROUTINE - ', I3, ' COURSES UPDATED')
11011    FORMAT (1H , 'NEGATIVE BACKLOG FOR COURSE ', A4,
          '.  BACKLOG ZEROED FOR THIS RUN')
10012    FORMAT (' NEGATIVE CONVENINGS FOR COURSE ', A4,' ZEROED THIS RUN')
10017    FORMAT (' OFFSET GT 1 YEAR FOR COURSE ', A4, ' ZEROED THIS RUN.')
702      FORMAT (' NEGATIVE DEMAND FOR COURSE ', A4, '  ZEROED THIS RUN')
11018    FORMAT(' NEGATIVE BUPERS DEMAND COURSE ', A4,'  ZEROED THIS RUN')
11020    FORMAT (' WARNING - BUPERS DEMAND WITH NO BUPERS SEATS COURSE ',
          A4, '   BUPERS DEMAND WILL AFFECT LOCAL QUOTA CONTROL INPUTS')
1013     FORMAT ('OMODEL PRERUN INITIALIZATION FLAG IS SET - 4TH QUARTER WI
         LL BE RUN TO INIT COURSES IN SESSION AT MODEL START',//)
11035    FORMAT (' NEGATIVE CHANGE WEEK COURSE ',A4,' ZEROED THIS RUN')
11136    FORMAT (' TRACE- END OF WEEK    WEEK =', I3, ';   QUARTER =', I2,
         ';   YEAR =', I5, 5X, 'COURSES ACTIVE THIS WEEK =', I4,/)
1999     FORMAT (1H0, T39, '**** NORMAL END OF TPF MODEL - ', I3,
          ' COURSES PROCESSED ****')
```

CHART TITLE - SUBROUTINE CRSRLS(X)



/ CRSRLS /
13.10--->
17.03--->
17.04--->
NOTE 01
BEGIN DO LOOP
10 Y = LAST, 300
07
ACTIVE(Y)
(-/0)
(+)
50
03
NEGFLG
(-/0)
(+)
17.13.
51
10
04
END OF DO LOOP?
NO
YES
17.02
05
/ WRITE TO DEV 6 VIA FORMAT 1000 FROM THE LIST /
NOTE 06
LIST = (COP(X))
EXIT SUBROUTINE
07
19.15.
999
60
08
TCONV(Q,X) = TCONV(Q,X) + 1
TCAP(Q,X) = TCAP(Q,X) + CAP
63
09
CRSRUN(X) = CRSRUN(X) + 1
ACTIVE(Y) = COURSE
ACTCTR(Y) = LEN
ACTNEG(Y) = 0
10
LAST = Y
11
ITEM = 0
12
BDMAND(X)
(-/0)
(+)
18.08
200
18.01.
101
51
13
DUMMY = 0
14
PRERUN (1)
15
DUMMY
(-/0)
(+)
19.15
999

COURSE RELEASE (START) SUBROUTINE - RELEASES COURSE, CALCULATES BUPERS SEATS & ATTENDANCE, LOCAL QUOTA CONTROL SCHEDULING, BACKLOG, NOSHOWS, SUBSTITUTE QUOTAS, AND ULTIMATE CLASS UTILIZATION, INCLUDING SETBACKS.

COURSE TOTALS - ADDED TO QUARTER TOTALS AS COURSE RELEASES: CAPACITY, UTILIZATION, NOSHOWS, BACKLOG, SUBSTITUTE QUOTAS.

COMMON DATA FOR CLASS DATA MATRIX

QUARTERLY AND ANNUAL COURSE TOTALS ACCUMULATION

COMMON FOR COMMUNICATION BETWEEN SUBROUTINES

COMMON FOR COURSE ACTIVE MATRIX ELEMENTS

SEARCH ACTIVE MATRIX FOR FIRST AVAILABLE SLOT FOR NEW ACTIVE CONVNING.
ACTIVE (Y) IS ZERO IF NOT IN USE, HAS POINTER TO CRSE MATRIX IF IN USE
LAST IS POSITION LAST USED TO INSERT A COURSE, START SEARCH FROM THERE
LAST IS 1 IF THIS IS FIRST COURSE RELEASE FOR THE WEEK.

TEST IF LOCATION UNUSED IN ACTIVE MATRIX, EXIT IF FREE.

HAVE FOUND OPENING IN TABLE, OPENING IS 'Y', COURSE POINTER IS 'X'.

TEST IF NEGFLG IS ON (INDICATES MODEL PRESTART CONVENING).

HERE IF TABLE FULL - CANNOT RELEASE COURSE-WRITE ERROR MESSAGE.

COURSE SHOULD BE RELEASED NORMALLY - ACCUMULATE TOTALS IN QUARTER MTRX FOR CONVENINGS AND CAPACITY.

LOAD ACTIVE MATRIX & BUMP CRSRUN COUNTER IN COURSE MATRIX, PRESTART COURSES ENTER ROUTINE HERE. SAVE LAST AS NEXT POINTER TO ACTIVE MATRX

CHECK IF BUPERS HAS ANY CONTROLLED DEMAND FOR THIS COURSE-ITEM IS NUMB
CURRENTLY MODEL ALLOWS BUPERS TO OVERBOOK THERE COURSE

HERE IF FLAG IS ON - CALL PRESTART SUBROUTINE TO TEST IF COURSE SHOULD BE STARTED. INIT RETURN CODE (DUMMY) TO 0

RETURN CODE 1 IF COURSE TO BE STARTED, 0 IF TO SKIP (DUMMY) IF COURSE TO BE STARTED, SKIP OVER QUARTERLY TOTAL ACCUMULATE.

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CHART TITLE - SUBROUTINE CASRLS(X)

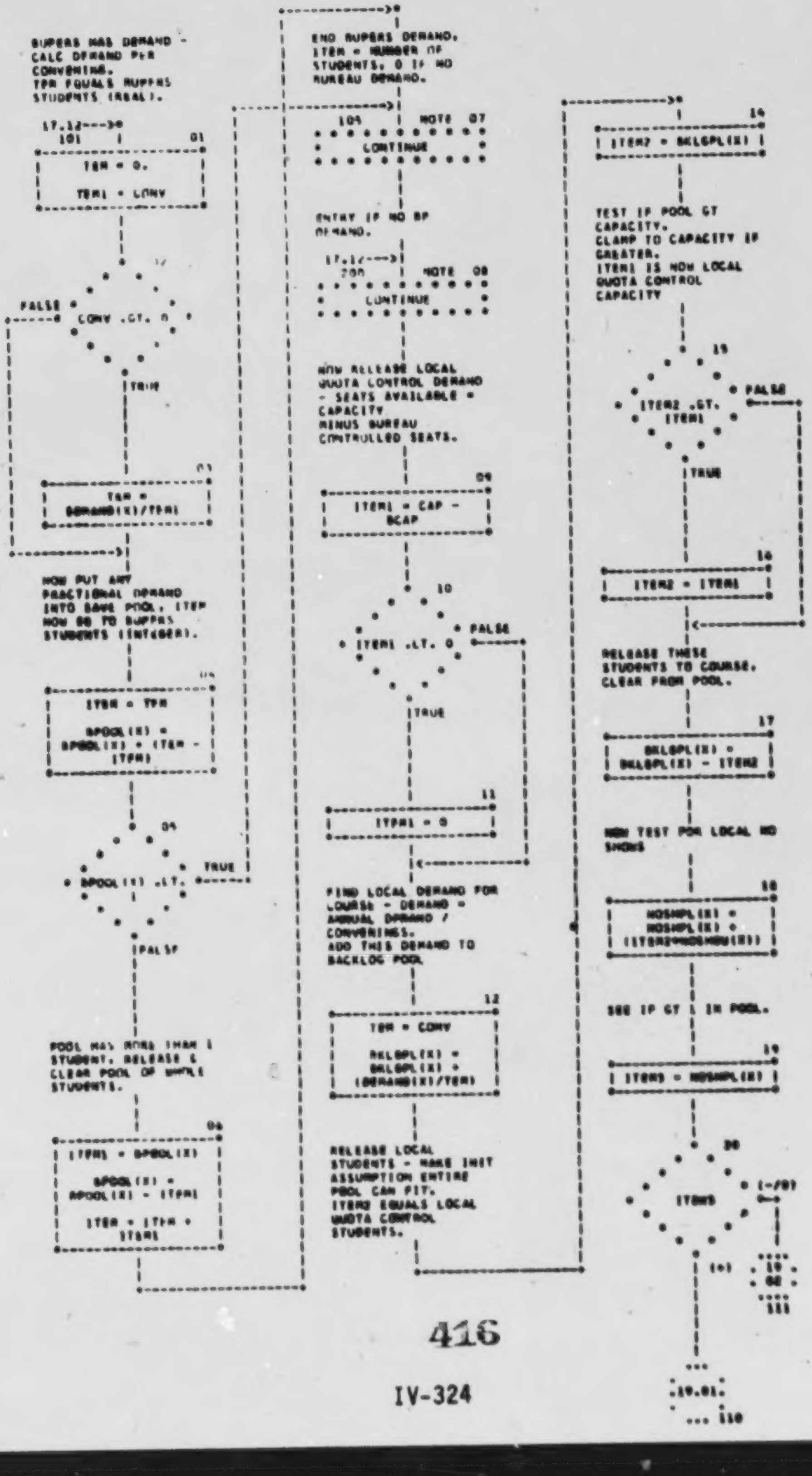

BUPERS HAS DEMAND -
CALC DEMAND PER
CONVENING.
TPR EQUALS BUPERS
STUDENTS (REAL).
17.12---->
101
01
TPR = 0.
TPRI = CONV
02
FALSE
CONV .GT. 0
TRUE
03
TPR =
DEMAND(X)/TPRI
NOW PUT ANY
FRACTIONAL DEMAND
INTO SAVE POOL. ITEM
NOW BE TO BUPERS
STUDENTS (INTEGER).
04
ITEM = TPR
BPOOL(X) =
BPOOL(X) + (TPR -
ITEM)
05
TRUE
BPOOL(X) .LT. 1
FALSE
POOL HAS MORE THAN 1
STUDENT. RELEASE &
CLEAR POOL OF WHOLE
STUDENTS.
06
ITEM1 = BPOOL(X)
BPOOL(X) =
BPOOL(X) - ITEM1
ITEM = ITEM +
ITEM1
END BUPERS DEMAND.
ITEM = NUMBER OF
STUDENTS, 0 IF NO
BUREAU DEMAND.
105
NOTE 07
CONTINUE
ENTRY IF NO BP
DEMAND.
17.12--->
200
NOTE 08
CONTINUE
NOW RELEASE LOCAL
QUOTA CONTROL DEMAND
- SEATS AVAILABLE =
CAPACITY
MINUS BUREAU
CONTROLLED SEATS.
09
ITEM1 = CAP -
BCAP
10
ITEM1 .LT. 0
FALSE
TRUE
11
ITEM1 = 0
FIND LOCAL DEMAND FOR
COURSE - DEMAND =
ANNUAL DEMAND /
CONVENINGS.
ADD THIS DEMAND TO
BACKLOG POOL
12
TPR = CONV
BKLGPL(X) =
BKLGPL(X) +
(DEMAND(X)/TPR)
RELEASE LOCAL
STUDENTS - MAKE INIT
ASSUMPTION ENTIRE
POOL CAN FIT.
ITEM2 EQUALS LOCAL
QUOTA CONTROL
STUDENTS.
14
ITEM2 = BKLGPL(X)
TEST IF POOL GT
CAPACITY.
CLAMP TO CAPACITY IF
GREATER.
ITEM1 IS NOW LOCAL
QUOTA CONTROL
CAPACITY
15
ITEM2 .GT.
ITEM1
FALSE
TRUE
16
ITEM2 = ITEM1
RELEASE THESE
STUDENTS TO COURSE.
CLEAR FROM POOL.
17
BKLGPL(X) =
BKLGPL(X) - ITEM2
NOW TEST FOR LOCAL NO
SHOWS
18
NOSHPL(X) =
NOSHPL(X) +
(ITEM2*NOSHOW(X))
SEE IF GT 1 IN POOL.
19
ITEM3 = NOSHPL(X)
20
ITEM3
(-/0)
(+)
19
02
111
19.01
110

CHART TITLE - SUBROUTINE LRSRLS(X)

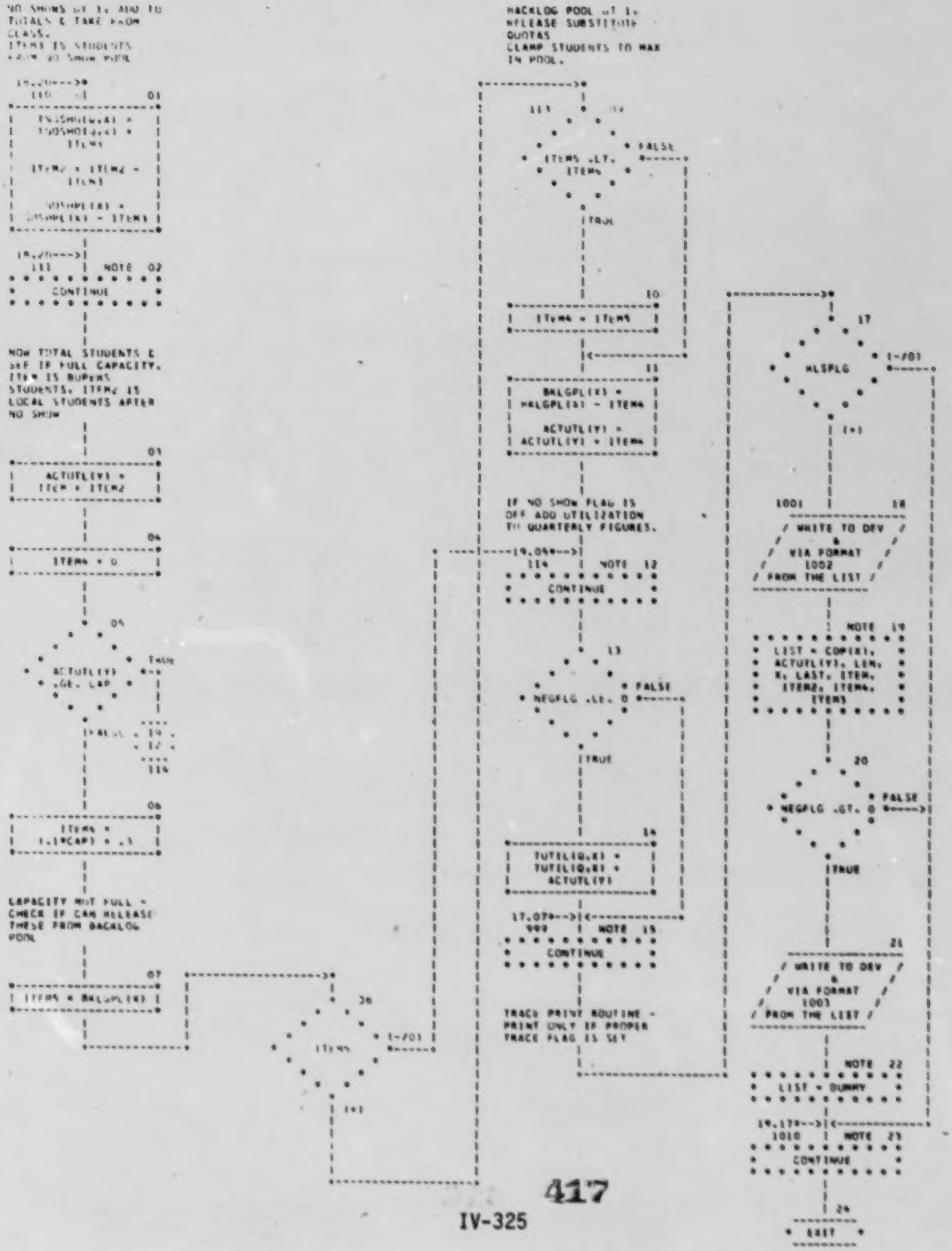
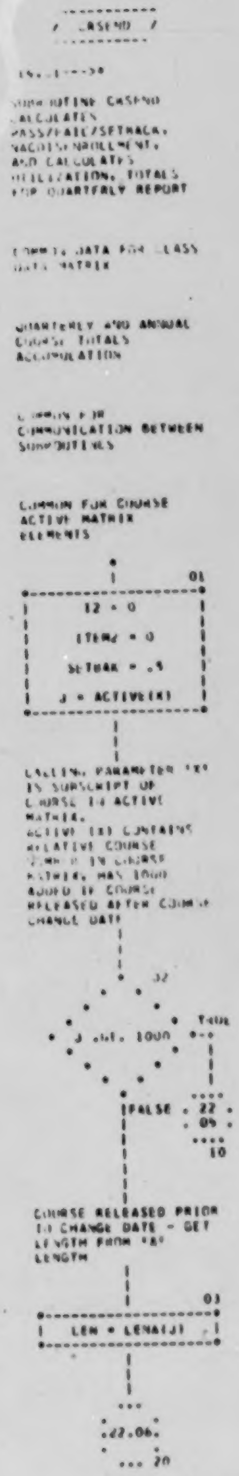

NO SHOWS GT 1. ADD TO TOTALS & TAKE FROM CLASS. ITEM3 IS STUDENTS FROM NO SHOW POOL
19,20--->
110
01
TNOSHO(W,X) = TNOSHO(W,X) + ITEM3
ITEM2 = ITEM2 - ITEM3
NOSHPL(X) = NOSHPL(X) - ITEM3
19,20--->
111
NOTE 02
CONTINUE
NOW TOTAL STUDENTS & SEE IF FULL CAPACITY. ITEM IS BUPERS STUDENTS. ITEM2 IS LOCAL STUDENTS AFTER NO SHOW
03
ACTUTL(Y) = ITEM + ITEM2
04
ITEM4 = 0
05
ACTUTL(Y) .GE. CAP
TRUE
FALSE
19
12
114
06
ITEM5 = (.1*CAP) + .5
CAPACITY NOT FULL - CHECK IF CAN RELEASE THESE FROM BACKLOG POOL
07
ITEM5 = BKLGPL(X)
08
ITEM5
(-/0)
(+)
BACKLOG POOL GT 1. RELEASE SUBSTITUTE QUOTAS CLAMP STUDENTS TO MAX IN POOL.
113
09
ITEM5 .LT. ITEM4
FALSE
TRUE
10
ITEM4 = ITEM5
11
BKLGPL(X) = BKLGPL(X) - ITEM4
ACTUTL(Y) = ACTUTL(Y) + ITEM4
IF NO SHOW FLAG IS OFF ADD UTILIZATION TO QUARTERLY FIGURES.
19,09--->
114
NOTE 12
CONTINUE
13
NEGFLG .LE. 0
FALSE
TRUE
14
TUTIL(Q,X) = TUTIL(Q,X) + ACTUTL(Y)
17,07--->
999
NOTE 15
CONTINUE
TRACE PRINT ROUTINE - PRINT ONLY IF PROPER TRACE FLAG IS SET
17
RLSFLG
(-/0)
(+)
1001
18
WRITE TO DEV 6 VIA FORMAT 1002 FROM THE LIST
NOTE 19
LIST = COP(X), ACTUTL(Y), LEN, X, LAST, ITEM, ITEM2, ITEM4, ITEM5
20
NEGFLG .GT. 0
FALSE
TRUE
21
WRITE TO DEV 6 VIA FORMAT 1003 FROM THE LIST
NOTE 22
LIST = DUMMY
19,17--->
1010
NOTE 23
CONTINUE
24
EXIT

CHART TITLE - NON-PROCEDURAL STATEMENTS

```
         IMPLICIT INTEGER*2 (A-Z,$)
         REAL*4 BKLGPL
         REAL*4 NOSHPL, BPOOL, NADIS, FAIL
         REAL*4 ACTCTR, TFAIL, TNADIS
         REAL*4 LEN, LENA, LENB
         REAL*4 TEM, TEM1, TEM2, TEM3, TEM4, TEM5
         REAL*4 NOSHOW
         REAL*8 SCHOOL
         INTEGER*4 WHERE
         INTEGER*4 COP, JNO
         INTEGER*4 NEG
         INTEGER*4 TSDAYS
         INTEGER*4 ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
         INTEGER*4 TCAP, TUTIL, TPASS
         COMMON COP (200), SCHOOL (200), CRSRUN (200), CONVA (200)
         COMMON LENA (200), CAPA (200), BCAPA (200), OFFSET (200)
         COMMON CHGWK (200), CONVB (200), LENB (200), CAPB (200)
         COMMON BCAPB (200), NEG (200), BAKLOG (200), NOSHOW (200)
         COMMON BKLGPL (200), NOSHPL (200), DEMAND (200), BDMAND (200)
         COMMON BPOOL (200), FAIL (200), NADIS (200), JNO (200)
         COMMON TCAP (5, 200), TUTIL (5, 200), TSETBK (5, 200)
         COMMON TSDAYS (5, 200), TFAIL (5, 200), TNOSHO (5, 200)
         COMMON TNADIS (5, 200), TBKLOG (5, 200), TCONV (5, 200)
         COMMON DUMMY
         COMMON CONV, LEN, CAP, BCAP, LAST, COURSE
         COMMON TEM, TEM1, TEM2, TEM3, TEM4, TEM5
         COMMON ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
         COMMON YEAR, CRSES, Q, W
         COMMON WKOFF, INIT, WHERE
         COMMON NEGFLG, AOBCON
         COMMON TRACEF, RLSFLG, ENDFLG, PREFLG, YRFLG, YEARUN
         COMMON ACTIVE (300), ACTCTR (300), ACTUTL (300), ACTNEG (300)
1000     FORMAT (1H0, 'COURSE ACTIVE TABLE FULL - COURSE NOT RELEASED',
          *  ' COURSE NUMBER IS', A6)
1002     FORMAT (' RELEASE- COP= ', A6, ';  STUDENTS= ', I3, ';  LENGTH='
         ,F5.1,';  CRS SEQ=',I4,';  RUN POSITN=', I4, ';  BUPRS=', I3, ';
         LOCAL=', I3, ';  SUBQTA=', I2,';  NOSHO=', I3)
1003     FORMAT ('+', T132, 'P', I1)
```

CHART TITLE - SUBROUTINE CRSEND(X)



```
 -----------
 / CRSEND  /
 -----------

ENTRY---->

SUBROUTINE CRSEND
CALCULATES
PASS/FAIL/SETBACK,
NACOTS ENROLLMENT,
AND CALCULATES
UTILIZATION, TOTALS
FOR QUARTERLY REPORT


COMMON DATA FOR CLASS
DATA MATRIX

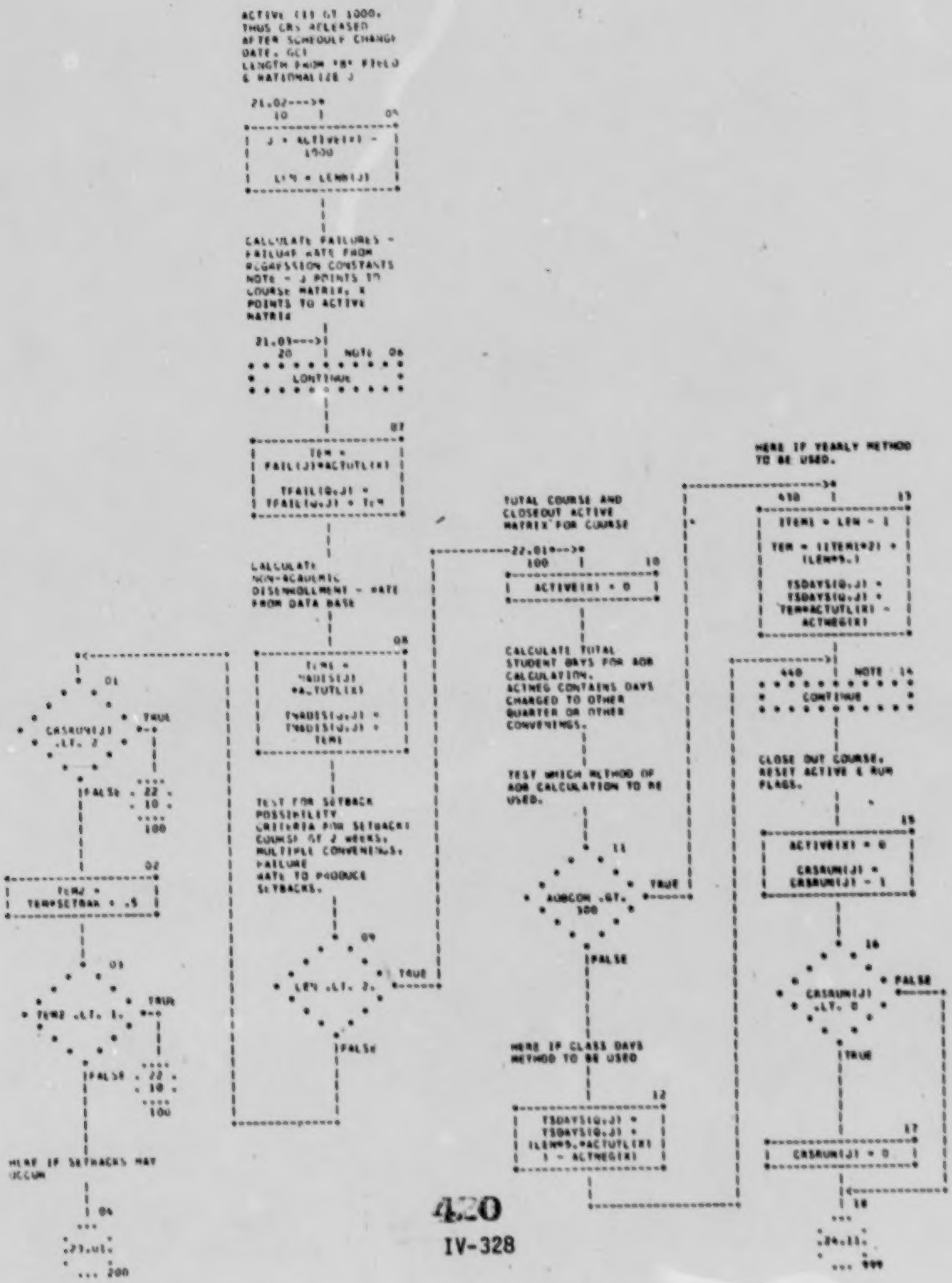

QUARTERLY AND ANNUAL
COURSE TOTALS
ACCUMULATION


COMMON FOR
COMMUNICATION BETWEEN
SUBROUTINES


COMMON FOR COURSE
ACTIVE MATRIX
ELEMENTS

           *
           I          01
*----------------------*
I        I2 = 0        I
I                      I
I      ITEM2 = 0       I
I                      I
I     SETBAK = .5      I
I                      I
I   J = ACTIVE(X)      I
*----------------------*
           I
           I
           I
CALLING PARAMETER 'X'
IS SUBSCRIPT OF
COURSE IN ACTIVE
MATRIX.
ACTIVE (X) CONTAINS
RELATIVE COURSE
NUMBER IN COURSE
MATRIX, HAS 1000
ADDED IF COURSE
RELEASED AFTER COURSE
CHANGE DATE
           I
           I
           I
           *    32
         *   *
       *       *
     *           *  TRUE
   *  J .GT. 1000  *-*
     *           *    I
       *       *      I
         *   *        I
           *        ....
           IFALSE  . 22 .
           I       . 05 .
           I        ....
           I          10
           I
           I
           I
COURSE RELEASED PRIOR
TO CHANGE DATE - GET
LENGTH FROM "A"
LENGTH
           I
           I
           I           03
*----------------------*
I   LEN = LENA(J)      I
*----------------------*
           I
           I
           I
          ...
        .     .
        .22.06.
        .     .
          ... 20
```

CHART TITLE - SUBROUTINE CRSENDIX)


ACTIVE (I) GT 1000, THUS CRS RELEASED AFTER SCHEDULE CHANGE DATE. GET LENGTH FROM "B" FIELD & RATIONALIZE J
21.02--->
10
05
J = ACTIVE(I) - 1000
LEN = LENB(J)
CALCULATE FAILURES - FAILURE RATE FROM REGRESSION CONSTANTS NOTE - J POINTS TO COURSE MATRIX, K POINTS TO ACTIVE MATRIX
21.03--->
20
NOTE 06
CONTINUE
07
TEM = FAIL(J)*ACTUTL(K)
TFAIL(Q,J) = TFAIL(Q,J) + TEM
CALCULATE NON-ACADEMIC DISENROLLMENT - RATE FROM DATA BASE
08
TEM1 = NADIS(J) *ACTUTL(K)
TNADIS(Q,J) = TNADIS(Q,J) + TEM1
TEST FOR SETBACK POSSIBILITY CRITERIA FOR SETBACK: COURSE GT 2 WEEKS, MULTIPLE CONVENINGS, FAILURE RATE TO PRODUCE SETBACKS.
09
LEN .LT. 2.
TRUE
FALSE
01
CRSRUN(J) .LT. 2
TRUE
FALSE
22
10
100
02
TEM2 = TEM*SETBAK + .5
03
TEM2 .LT. 1.
TRUE
FALSE
22
10
100
HERE IF SETBACKS MAY OCCUR
04
23.01
200
TOTAL COURSE AND CLOSEOUT ACTIVE MATRIX FOR COURSE
22.01--->
100
10
ACTIVE(K) = 0
CALCULATE TOTAL STUDENT DAYS FOR AOB CALCULATION. ACTNEG CONTAINS DAYS CHARGED TO OTHER QUARTER OR OTHER CONVENINGS.
TEST WHICH METHOD OF AOB CALCULATION TO BE USED.
11
AOBCON .GT. 300
TRUE
FALSE
HERE IF CLASS DAYS METHOD TO BE USED
12
TSDAYS(Q,J) = TSDAYS(Q,J) + (LEN*5.*ACTUTL(K)) - ACTNEG(K)
HERE IF YEARLY METHOD TO BE USED.
430
13
ITEM1 = LEN - 1
TEM = (ITEM1*2) + (LEN*5.)
TSDAYS(Q,J) = TSDAYS(Q,J) + TEM*ACTUTL(K) - ACTNEG(K)
440
NOTE 14
CONTINUE
CLOSE OUT COURSE. RESET ACTIVE & RUN FLAGS.
15
ACTIVE(K) = 0
CRSRUN(J) = CRSRUN(J) - 1
16
CRSRUN(J) .LT. 0
FALSE
TRUE
17
CRSRUN(J) = 0
18
24.11
999

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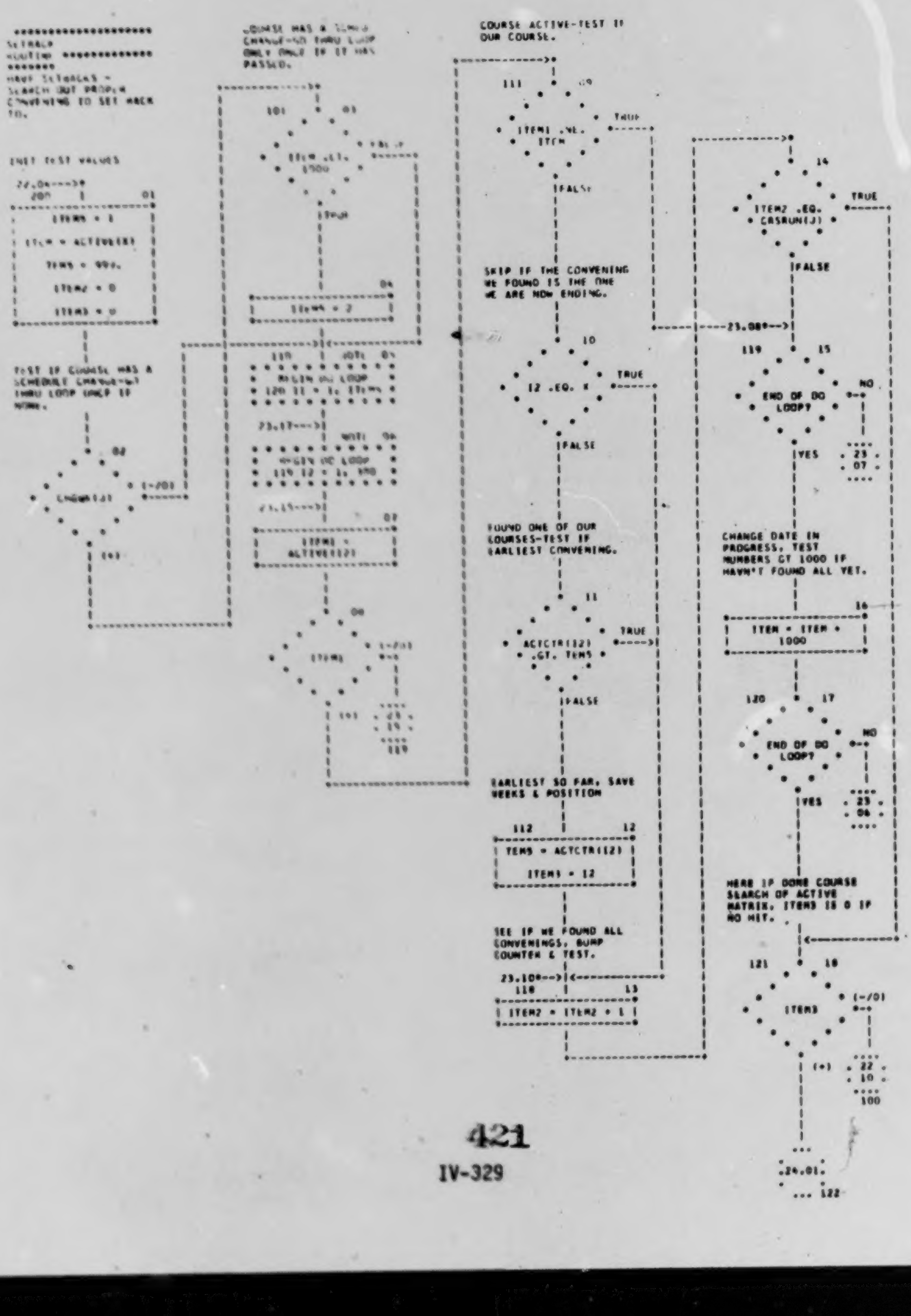
10/23/74

CHART TITLE - SUBROUTINE CRSEW(I)


SETBACK ROUTINE
HAVE SETBACKS - SEARCH OUT PROPER CONVENING TO SET BACK TO.
INIT TEST VALUES
22.04
200
01
ITEMS = 1
ITEM = ACTIVE(K)
TEMS = 999.
ITEM2 = 0
ITEM3 = 0
TEST IF COURSE HAS A SCHEDULE CHANGE-GO THRU LOOP ONLY IF NONE.
02
CHGWK(J)
(-/0)
(+)
COURSE HAS A SCHED CHANGE-GO THRU LOOP ONLY ONCE IF IT HAS PASSED.
101
03
ITEM .LT. 1000
FALSE
TRUE
04
ITEMS = 2
119
DO
05
BEGIN DO LOOP
120 I1 = 1, ITEMS
23.17
06
BEGIN DO LOOP
119 I2 = 1, 390
23.15
07
ITEM1 = ACTIVE(I2)
08
ITEM1
(-/0)
(+)
23
15
119
COURSE ACTIVE-TEST IF OUR COURSE.
111
09
ITEM1 .NE. ITEM
TRUE
FALSE
SKIP IF THE CONVENING WE FOUND IS THE ONE WE ARE NOW ENDING.
10
I2 .EQ. K
TRUE
FALSE
FOUND ONE OF OUR COURSES-TEST IF EARLIEST CONVENING.
11
ACTCTR(I2) .GT. TEMS
TRUE
FALSE
EARLIEST SO FAR, SAVE WEEKS & POSITION
112
12
TEMS = ACTCTR(I2)
ITEM3 = I2
SEE IF WE FOUND ALL CONVENINGS, BUMP COUNTER & TEST.
23.10
118
13
ITEM2 = ITEM2 + 1
14
ITEM2 .EQ. CRSRUN(J)
TRUE
FALSE
23.08
119
15
END OF DO LOOP?
NO
YES
23
07
CHANGE DATE IN PROGRESS. TEST NUMBERS GT 1000 IF HAVN'T FOUND ALL YET.
16
ITEM = ITEM + 1000
120
17
END OF DO LOOP?
NO
YES
23
06
HERE IF DONE COURSE SEARCH OF ACTIVE MATRIX. ITEM3 IS 0 IF NO HIT.
121
18
ITEM3
(-/0)
(+)
22
10
100
24.01
122

BEST COPY AVAILABLE

CHART TITLE - SUBROUTINE CRSEND(X)

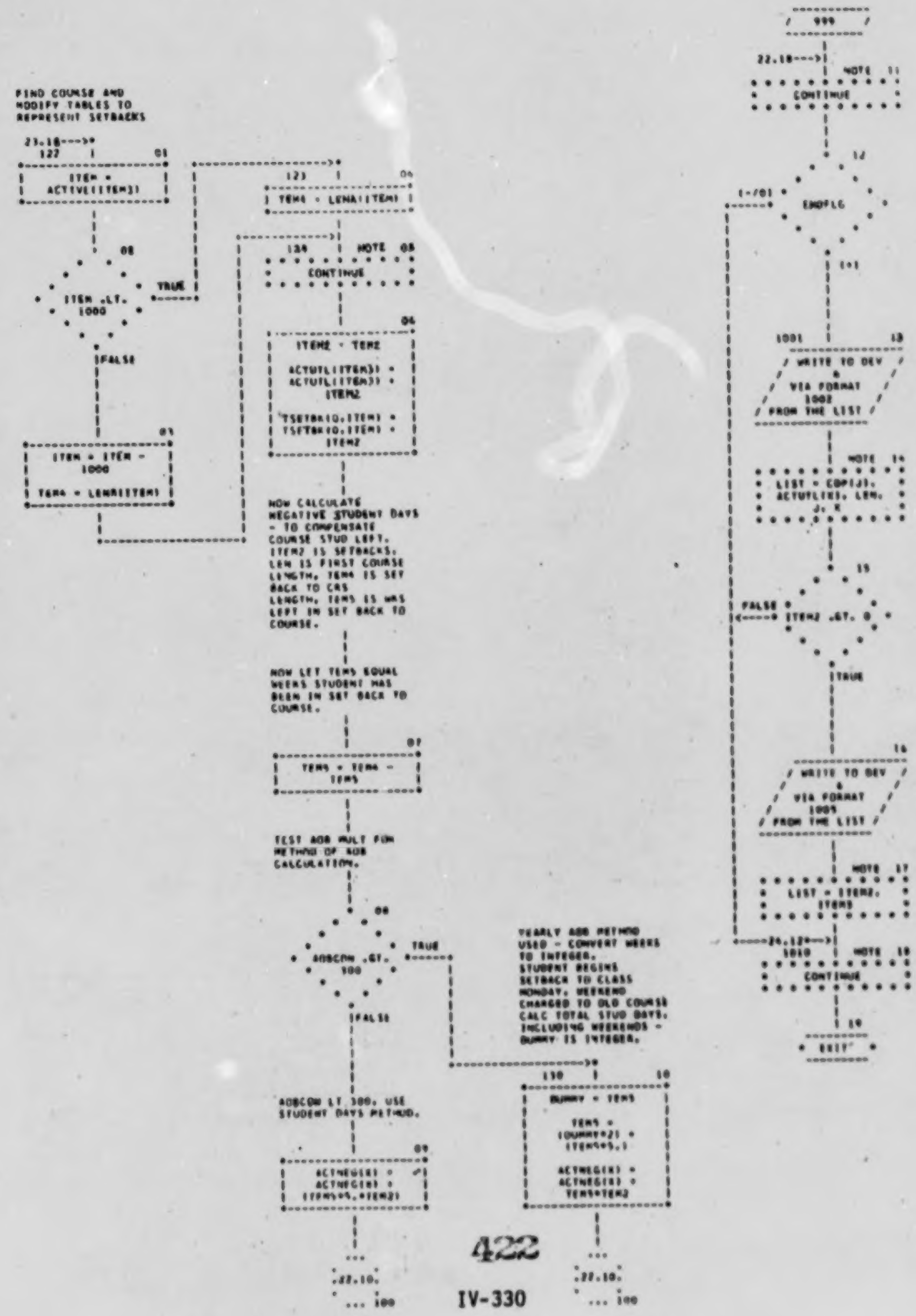

FIND COURSE AND
MODIFY TABLES TO
REPRESENT SETBACKS
23.18--->
122 01
ITEM = ACTIVE(ITEM3)
08
ITEM .LT. 1000
TRUE
FALSE
03
ITEM = ITEM - 1000
TEM4 = LENR(ITEM)
123 04
TEM4 = LENA(ITEM)
124 NOTE 05
CONTINUE
06
ITEM2 = TEM2
ACTUTL(ITEM3) = ACTUTL(ITEM3) + ITEM2
TSETBK(Q,ITEM) = TSETBK(Q,ITEM) + ITEM2
NOW CALCULATE
NEGATIVE STUDENT DAYS
- TO COMPENSATE
COURSE STUD LEFT.
ITEM2 IS SETBACKS.
LEN IS FIRST COURSE
LENGTH, TEM4 IS SET
BACK TO CRS
LENGTH, TEM5 IS WAS
LEFT IN SET BACK TO
COURSE.
NOW LET TEM5 EQUAL
WEEKS STUDENT HAS
BEEN IN SET BACK TO
COURSE.
07
TEM5 = TEM4 - TEM5
TEST ADB MULT FOR
METHOD OF ADB
CALCULATION.
08
ADBCON .GT. 300
TRUE
FALSE
YEARLY ADB METHOD
USED - CONVERT WEEKS
TO INTEGER.
STUDENT BEGINS
SETBACK TO CLASS
MONDAY. WEEKEND
CHARGED TO OLD COURSE
CALC TOTAL STUD DAYS.
INCLUDING WEEKENDS -
DUMMY IS INTEGER.
ADBCON LT 300. USE
STUDENT DAYS METHOD.
09
ACTNEG(X) = ACTNEG(X) + (TEM5*5.*ITEM2)
130 10
DUMMY = TEM5
TEM5 = (DUMMY*2) + (TEM5*5.)
ACTNEG(X) = ACTNEG(X) + TEM5*TEM2
22.10.
... 100
22.10.
... 100
999
22.18--->
NOTE 11
CONTINUE
12
(-/0)
ENDFLG
(+)
1001 13
WRITE TO DEV & VIA FORMAT 1002 FROM THE LIST
NOTE 14
LIST = COP(J), ACTUTL(X), LEN, J, K
15
FALSE
ITEM2 .GT. 0
TRUE
16
WRITE TO DEV & VIA FORMAT 1005 FROM THE LIST
NOTE 17
LIST = ITEM2, ITEM3
24.12--->
1010 NOTE 18
CONTINUE
19
EXIT

CHART TITLE - NON-PROCEDURAL STATEMENTS

```
      IMPLICIT INTEGER*2 (A-Z,$)
      REAL*4 HALGPL
      REAL*4 NOSHPL, RPOOL, HADIS, FAIL
      REAL*4 ACTSTR, TFAIL, THADIS
      REAL*4 LEN, LENA, LENB
      REAL*4 TEN, TEN1, TEN2, TEN3, TEN4, TEN5
      REAL*4 NOSHOW
      REAL*4 SETRAN
      REAL*8 SCHOOL
      INTEGER*4 WHERE
      INTEGER*4 COP, JNO
      INTEGER*4 NCL
      INTEGER*4 TSDAYS
      INTEGER*4 ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
      INTEGER*4 TCAP, TUTIL, TPASS
      COMMON COP (200), SCHOOL (200), CASRUN (200), CONVA (200)
      COMMON LENA (200), CAPA (200), RCAPA (200), OFFSET (200)
      COMMON CHGNA (200), CONVB (200), LENB (200), CAPB (200)
      COMMON RCAPB (200), HRS (200), BARLOG (200), NOSHOW (200)
      COMMON HALGPL (200), NOSHPL (200), DEMAND (200), SDMAND (200)
      COMMON RPOOL (200), FAIL (200), HADIS (200), JNO (200)
      COMMON TCAP (5, 200), TUTIL (5, 200), TSETBK (5, 200)
      COMMON TSDAYS (5, 200), TFAIL (5, 200), TNOSHO (5, 200)
      COMMON THADIS (5, 200), TBKLOG (5, 200), TCONV (5, 200)
      COMMON DUMMY
      COMMON CONV, LEN, CAP, RCAP, LAST, COURSE
      COMMON TEN, TEN1, TEN2, TEN3, TEN4, TEN5
      COMMON ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
      COMMON YEAR, CASES, U, N
      COMMON WKOFF, INIT, WHERE
      COMMON NEGFLG, ADRCOM
      COMMON TRACAP, ALSFLG, ENDFLG, HREFLG, VRFLG, YEARUN
      COMMON ACTIVE (300), ACTSTR (300), ACTUTL (300), ACTNEB (300)
1004  FORMAT (' CRS END= COP= ', A8, ';  STUDENTS= ', I3, ';  LENGTH='
      ,F5.1,';  CRS BEG=',I5,';  NUM POSITN=', I4)
1005  FORMAT ('+', T105, I2, ' STDNTS SET TO CRS ', I4)
```

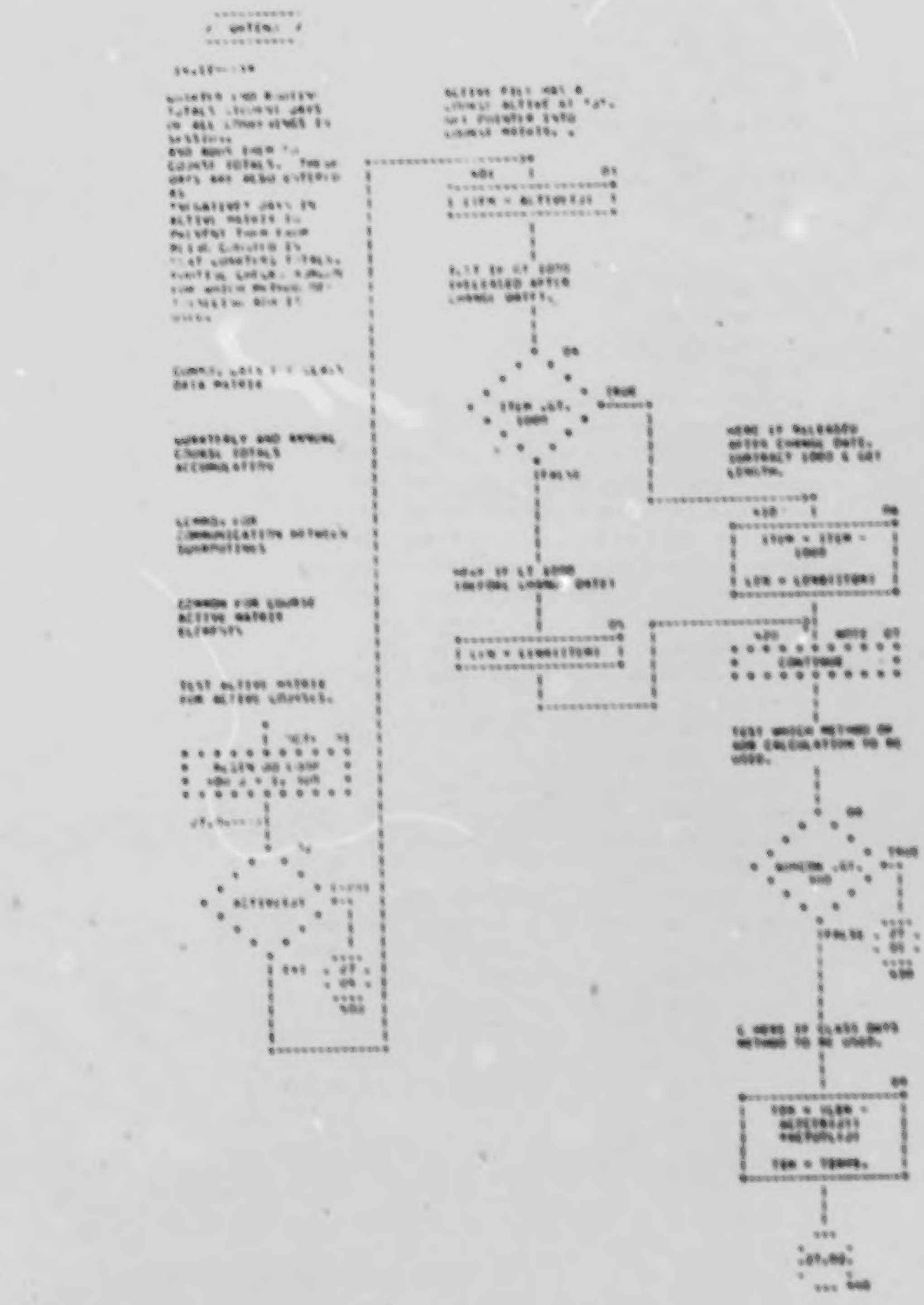


CHART TITLE - SUBROUTINE URTEND(X)

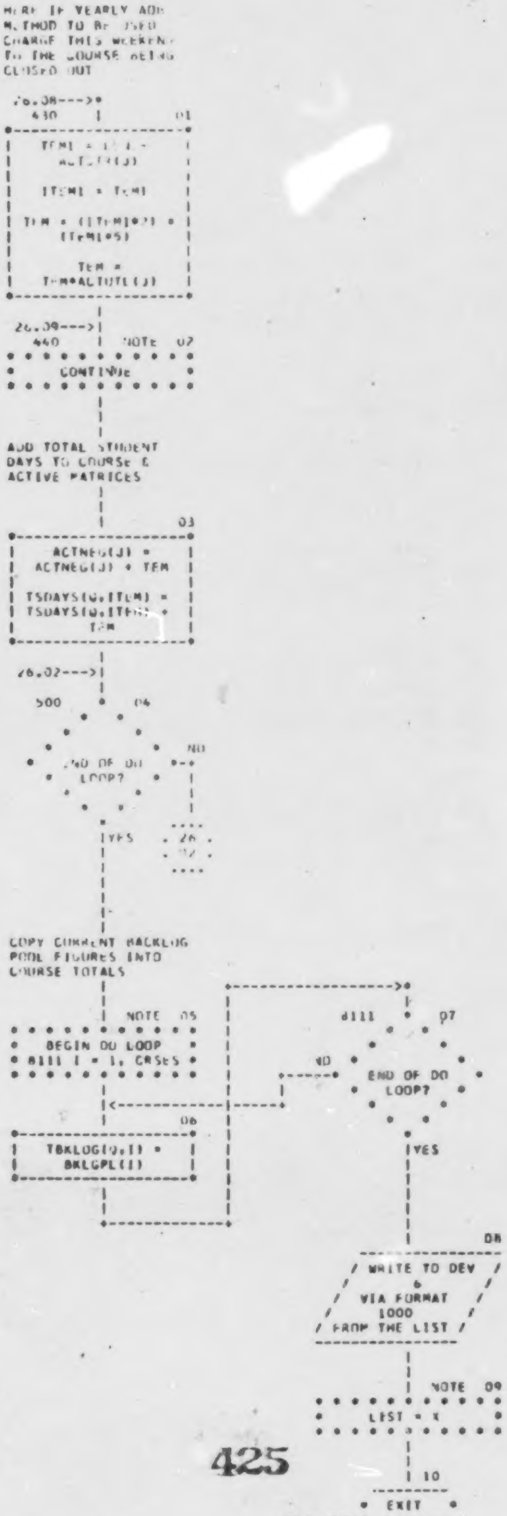
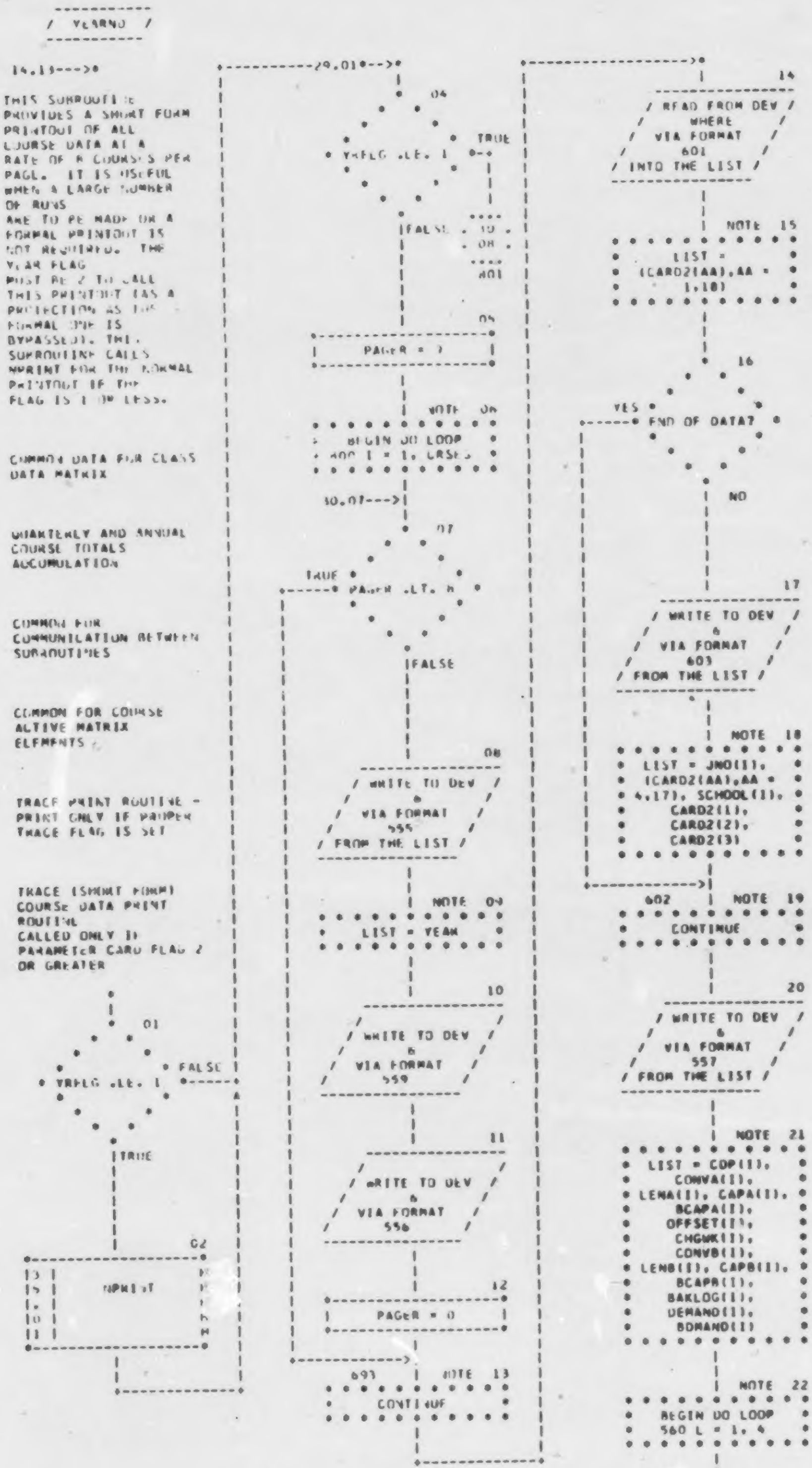

HERE IF YEARLY ADD
METHOD TO BE USED
CHARGE THIS WEEKEND
TO THE COURSE BEING
CLOSED OUT
26.08--->
430
01
TEMI = 1.0 -
ACTUTR(J)
ITEMI = TEMI
TEM = ((ITEMI*2) +
(TEMI*5)
TEM =
TEM*ACTUTL(J)
26.09--->
440
NOTE 02
CONTINUE
ADD TOTAL STUDENT
DAYS TO COURSE &
ACTIVE MATRICES
03
ACTNEG(J) =
ACTNEG(J) + TEM
TSDAYS(Q,ITEM) =
TSDAYS(Q,ITEM) +
TEM
26.02--->
500
04
END OF DO
LOOP?
NO
YES
26
02
COPY CURRENT BACKLOG
POOL FIGURES INTO
COURSE TOTALS
NOTE 05
BEGIN DO LOOP
8111 I = 1, CRSES
06
TBKLOG(Q,I) =
BKLGPL(I)
8111
07
NO
END OF DO
LOOP?
YES
08
WRITE TO DEV
6
VIA FORMAT
1000
FROM THE LIST
NOTE 09
LIST = X
10
EXIT

CHART TITLE - SUBROUTINE YEARNO(X)


/ YEARNO /
14.13--->
--29.01--->
04
YRFLG .LE. 1
TRUE
FALSE
10
08
801
05
PAGER = 7
NOTE 06
BEGIN DO LOOP
800 I = 1, CRSES
30.07--->
07
TRUE
PAGER .LT. 8
FALSE
08
/ WRITE TO DEV /
6
VIA FORMAT
555
/ FROM THE LIST /
NOTE 09
LIST = YEAR
10
/ WRITE TO DEV /
6
VIA FORMAT
559
11
/ WRITE TO DEV /
6
VIA FORMAT
556
12
PAGER = 0
691
NOTE 13
CONTINUE
01
YRFLG .LE. 1
FALSE
TRUE
02
NPRINT
14
/ READ FROM DEV /
WHERE
VIA FORMAT
601
/ INTO THE LIST /
NOTE 15
LIST =
(CARD2(AA),AA =
1,18)
16
YES
END OF DATA?
NO
17
/ WRITE TO DEV /
6
VIA FORMAT
603
/ FROM THE LIST /
NOTE 18
LIST = JNO(I),
(CARD2(AA),AA =
4,17), SCHOOL(I),
CARD2(1),
CARD2(2),
CARD2(3)
602
NOTE 19
CONTINUE
20
/ WRITE TO DEV /
6
VIA FORMAT
557
/ FROM THE LIST /
NOTE 21
LIST = COP(I),
CONVA(I),
LENA(I), CAPA(I),
BCAPA(I),
OFFSET(I),
CHGWK(I),
CONVB(I),
LENB(I), CAPB(I),
BCAPB(I),
BAKLOG(I),
DEMAND(I),
BDMAND(I)
NOTE 22
BEGIN DO LOOP
560 L = 1, 4
/30.01

THIS SUBROUTINE PROVIDES A SHORT FORM PRINTOUT OF ALL COURSE DATA AT A RATE OF 8 COURSES PER PAGE. IT IS USEFUL WHEN A LARGE NUMBER OF RUNS ARE TO BE MADE OR A FORMAL PRINTOUT IS NOT REQUIRED. THE YEAR FLAG MUST BE 2 TO CALL THIS PRINTOUT (AS A PROTECTION AS THE FORMAL ONE IS BYPASSED). THE SUBROUTINE CALLS NPRINT FOR THE NORMAL PRINTOUT IF THE FLAG IS 1 OR LESS.

COMMON DATA FOR CLASS DATA MATRIX

QUARTERLY AND ANNUAL COURSE TOTALS ACCUMULATION

COMMON FOR COMMUNICATION BETWEEN SUBROUTINES

COMMON FOR COURSE ACTIVE MATRIX ELEMENTS

TRACE PRINT ROUTINE - PRINT ONLY IF PROPER TRACE FLAG IS SET

TRACE (SHORT FORM) COURSE DATA PRINT ROUTINE CALLED ONLY IF PARAMETER CARD FLAG 2 OR GREATER

CHART TITLE - SUBROUTINE YEARNDIX

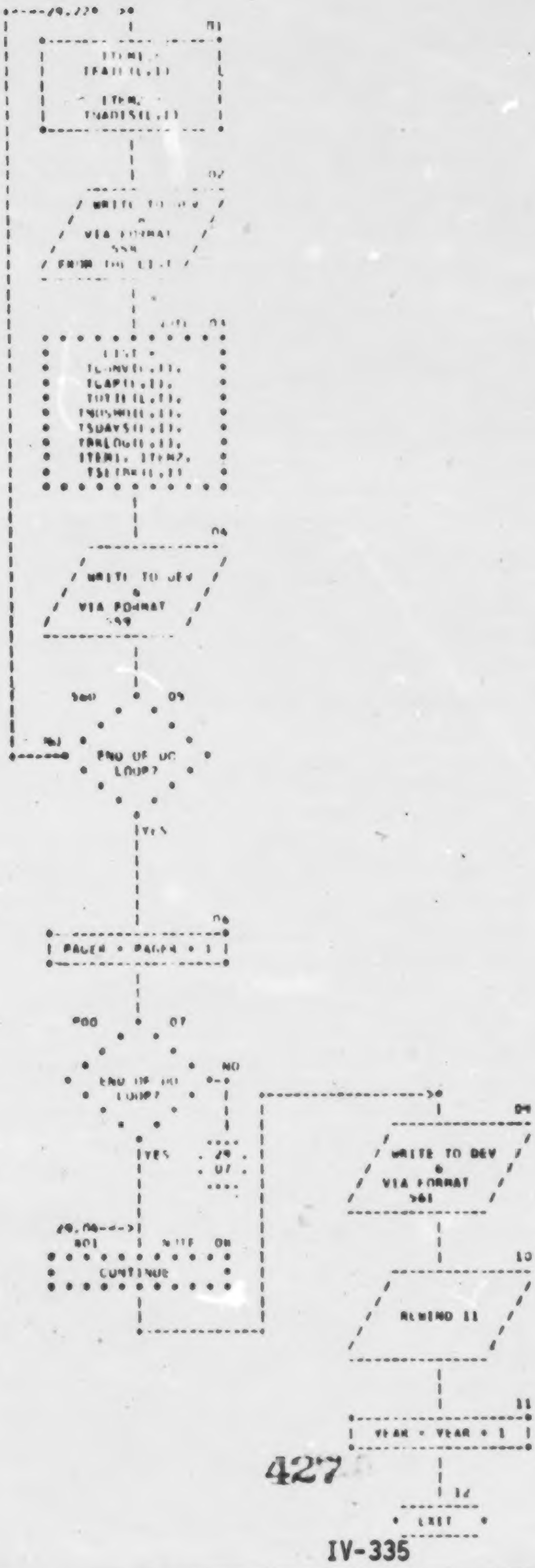

29,22
01
ITEM1 =
IFAIL(L,I)
ITEM2 =
INADISIL,I)
02
WRITE TO DEV
6
VIA FORMAT
558
FROM LIST
03
LIST =
ICONV(L,I),
ICAP(L,I),
TOT(L,I),
INOSHO(L,I),
TSDAYS(L,I),
TBKLOG(L,I),
ITEM1, ITEM2,
TSITRK(L,I)
04
WRITE TO DEV
6
VIA FORMAT
559
500
05
NO
END OF DO
LOOP?
YES
06
PAGER = PAGER + 1
800
07
END OF DO
LOOP?
NO
29
07
YES
29,06
801
NOTE
08
CONTINUE
09
WRITE TO DEV
6
VIA FORMAT
561
10
REWIND 11
11
YEAR = YEAR + 1
12
EXIT

CHART TITLE - NON-PROCEDURAL STATEMENTS

```
          IMPLICIT INTEGER*2 (A-Z,$)
          REAL*4 HALGPL
          REAL*4 NOSHPL, BPOOL, NADIS, FAIL
          REAL*4 ACTCTR, TFAIL, TNADIS
          REAL*4 LEN, LENA, LENB
          REAL*4 TEM, TEM1, TEM2, TEM3, TEM4, TEM5
          REAL*4 NOSHOW
          REAL*4 SCHOOL
          INTEGER*4 WHERE
          INTEGER*4 COP, JNO
          INTEGER*4 NIC
          INTEGER*4 TSDAYS
          INTEGER*4 ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
          INTEGER*4 TCAP, TUTIL, TPASS
          INTEGER*4 CARD2
          DIMENSION CARD2 (18)
          COMMON COP (200), SCHOOL (200), CRSRUN (200), CONVA (200)
          COMMON LENA (200), CAPA (200), BCAPA (200), OFFSET (200)
          COMMON CHGWK (200), CONVB (200), LENB (200), CAPB (200)
          COMMON BCAPB (200), NIC (200), BAKLOG (200), NOSHOW (200)
          COMMON HALGPL (200), NOSHPL (200), DEMAND (200), RDMAND (200)
          COMMON BPOOL (200), FAIL (200), NADIS (200), JNO (200)
          COMMON TCAP (5, 200), TUTIL (5, 200), TSETBK (5, 200)
          COMMON TSDAYS (5, 200), TFAIL (5, 200), TNOSHO (5, 200)
          COMMON TNADIS (5, 200), TBKLOG (5, 200), TCONV (5, 200)
          COMMON DUMMY
          COMMON CONV, LEN, CAP, BCAP, LAST, COURSE
          COMMON TEM, TEM1, TEM2, TEM3, TEM4, TEM5
          COMMON ITEM, ITEM1, ITEM2, ITEM3, ITEM4, ITEM5
          COMMON YEAR, CASES, V, W
          COMMON WKOFF, INIT, WHERE
          COMMON NESFLG, ADDCOM
          COMMON TRACEF, ALSFLG, ENDFLG, PREFLG, YRFLG, YEARUN
          COMMON ACTIVE (300), ACTCTR (300), ACTUTL (300), ACTNEG (300)
995       FORMAT (1H1, T44, '******** ',I4, ' TPF MODEL TRACE RUN COURSE LIS
          T ********')
996       FORMAT ('0 COP CNVA LENA CAPA BCPA FSET WCHG CNVB LENB CAPB BCPB',
           ' BKLG DMAND RDMND',
           T79, 'TCONV  TCAP TUTIL TNSHO TSDAY BKLOG TFAIL TNADS SETBK')
601       FORMAT (10X, 2A4, A2, 15A4)
603       FORMAT ('0', A4, 1X, 14A4, 1X, A6, 1X, 2A4, A2)
997       FORMAT (1H , A4, I5, F9.1, 5I5, F9.1, 3I5, 2I6)
998       FORMAT (1H+, T78, 9I6)
599       FORMAT (' ')
901       FORMAT ('1')
```

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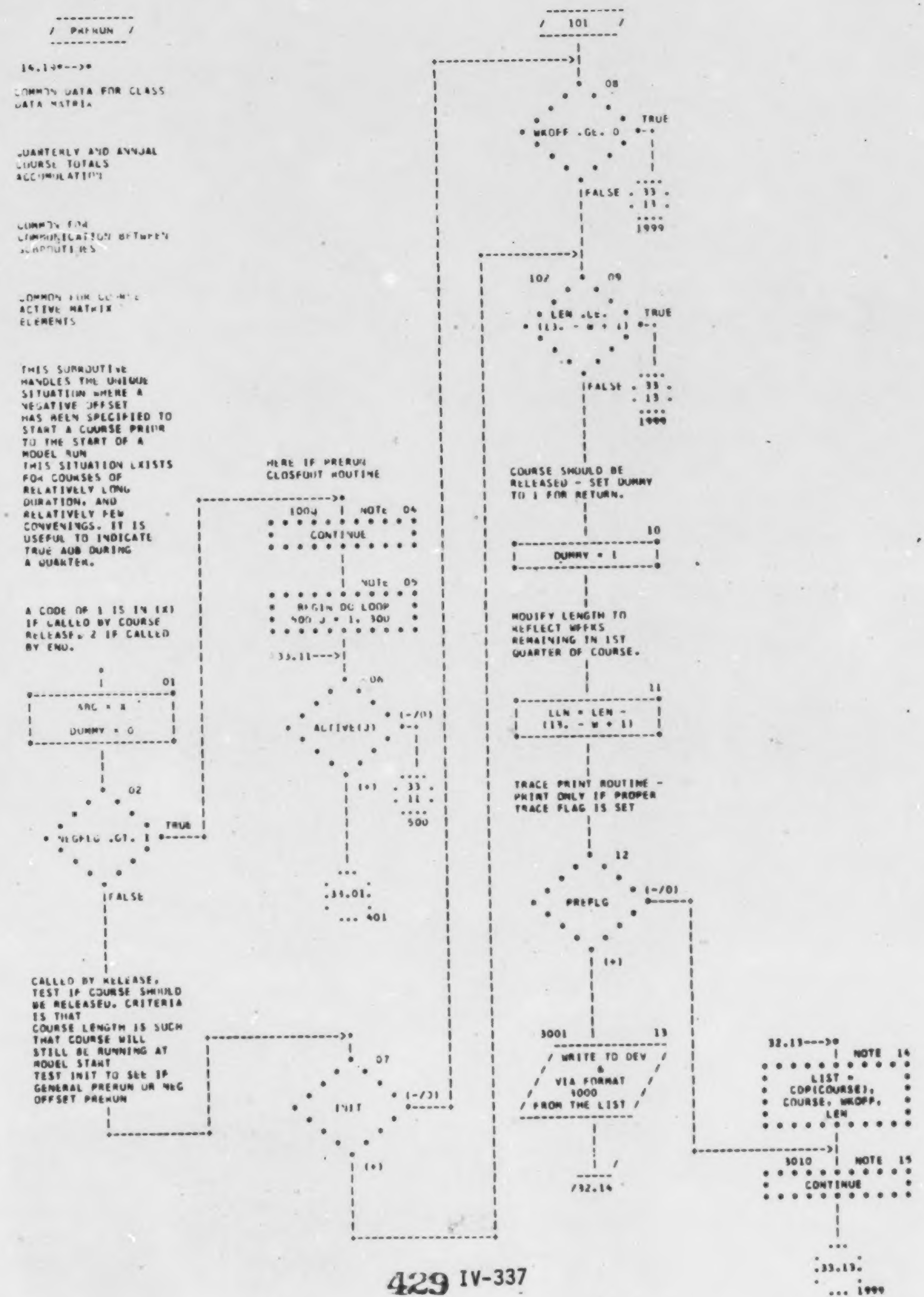
CHART TITLE - SUBROUTINE PRERUN(X)



COMMON DATA FOR CLASS DATA MATRIX

QUARTERLY AND ANNUAL COURSE TOTALS ACCUMULATION

COMMON FOR COMMUNICATION BETWEEN SUBROUTINES

COMMON FOR COMPLETE ACTIVE MATRIX ELEMENTS

THIS SUBROUTINE HANDLES THE UNIQUE SITUATION WHERE A NEGATIVE OFFSET HAS BEEN SPECIFIED TO START A COURSE PRIOR TO THE START OF A MODEL RUN
THIS SITUATION EXISTS FOR COURSES OF RELATIVELY LONG DURATION, AND RELATIVELY FEW CONVENINGS. IT IS USEFUL TO INDICATE TRUE AOB DURING A QUARTER.

A CODE OF 1 IS IN (X) IF CALLED BY COURSE RELEASE, 2 IF CALLED BY END.

CALLED BY RELEASE, TEST IF COURSE SHOULD BE RELEASED. CRITERIA IS THAT
COURSE LENGTH IS SUCH THAT COURSE WILL STILL BE RUNNING AT MODEL START
TEST INIT TO SEE IF GENERAL PRERUN OR NEG OFFSET PRERUN

HERE IF PRERUN CLOSEOUT ROUTINE

COURSE SHOULD BE RELEASED - SET DUMMY TO 1 FOR RETURN.

MODIFY LENGTH TO REFLECT WEEKS REMAINING IN 1ST QUARTER OF COURSE.

TRACE PRINT ROUTINE - PRINT ONLY IF PROPER TRACE FLAG IS SET

PRERUN
14.13--->
01
ARG = X
DUMMY = 0
02
NEGFLG .GT. 1
TRUE
FALSE
07
INIT
(-/3)
(+)
1004
NOTE 04
CONTINUE
NOTE 05
BEGIN DO LOOP
500 J = 1, 300
33.11--->
06
ACTIVE(J)
(-/0)
(+)
33
11
500
33.01
401
101
08
WKOFF .GT. 0
TRUE
FALSE
33
13
1999
102
09
LEN .LE.
(13. - W + 1)
TRUE
FALSE
33
13
1999
10
DUMMY = 1
11
LEN = LEN -
(13. - W + 1)
12
PREFLG
(-/0)
(+)
3001
13
WRITE TO DEV
6
VIA FORMAT
3000
FROM THE LIST
32.14
32.13--->
NOTE 14
LIST =
COP(COURSE),
COURSE, WKOFF,
LEN
3010
NOTE 15
CONTINUE
33.13
1999

CHART TITLE - SUBROUTINE PRERUN(X)

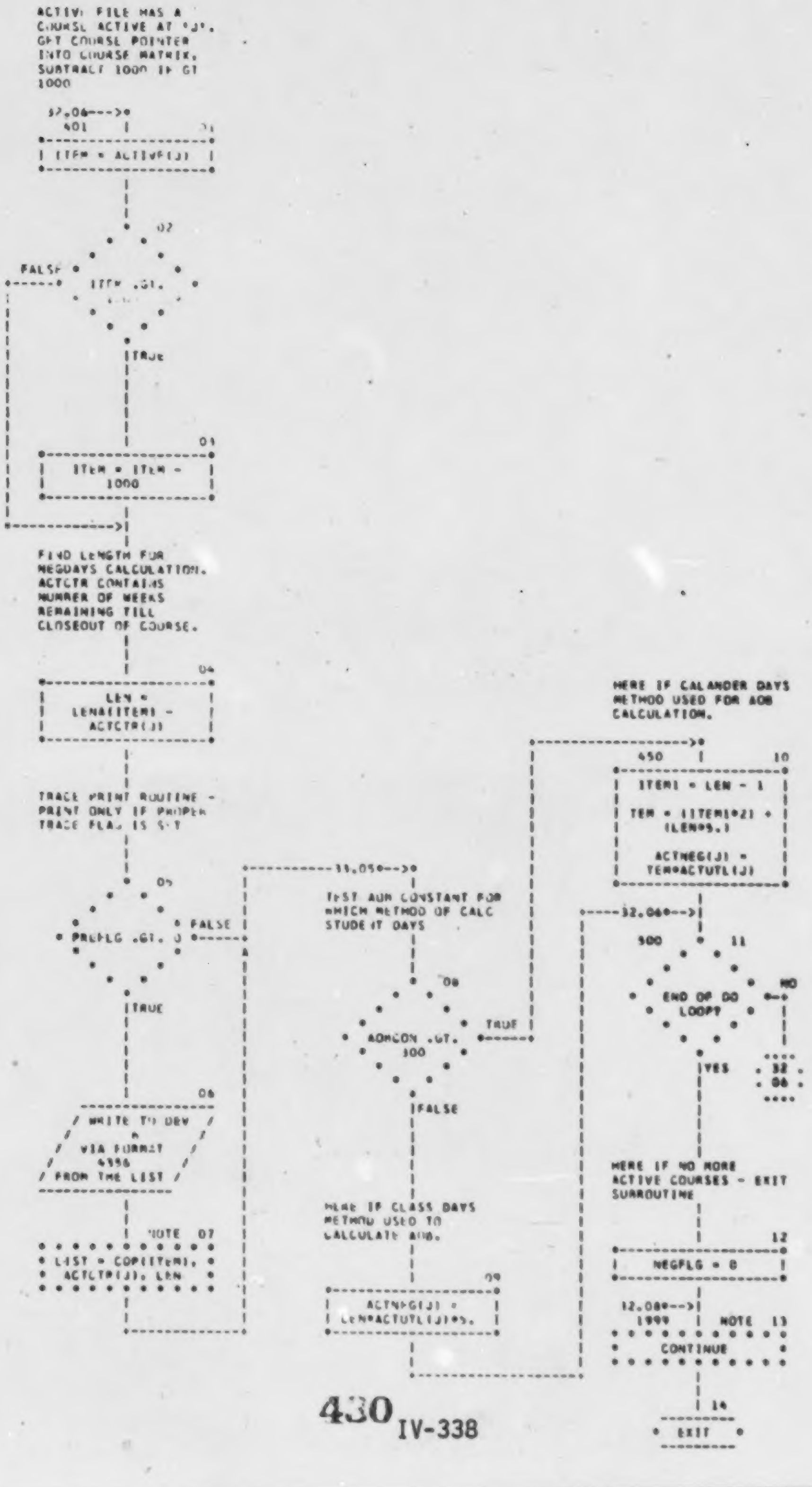
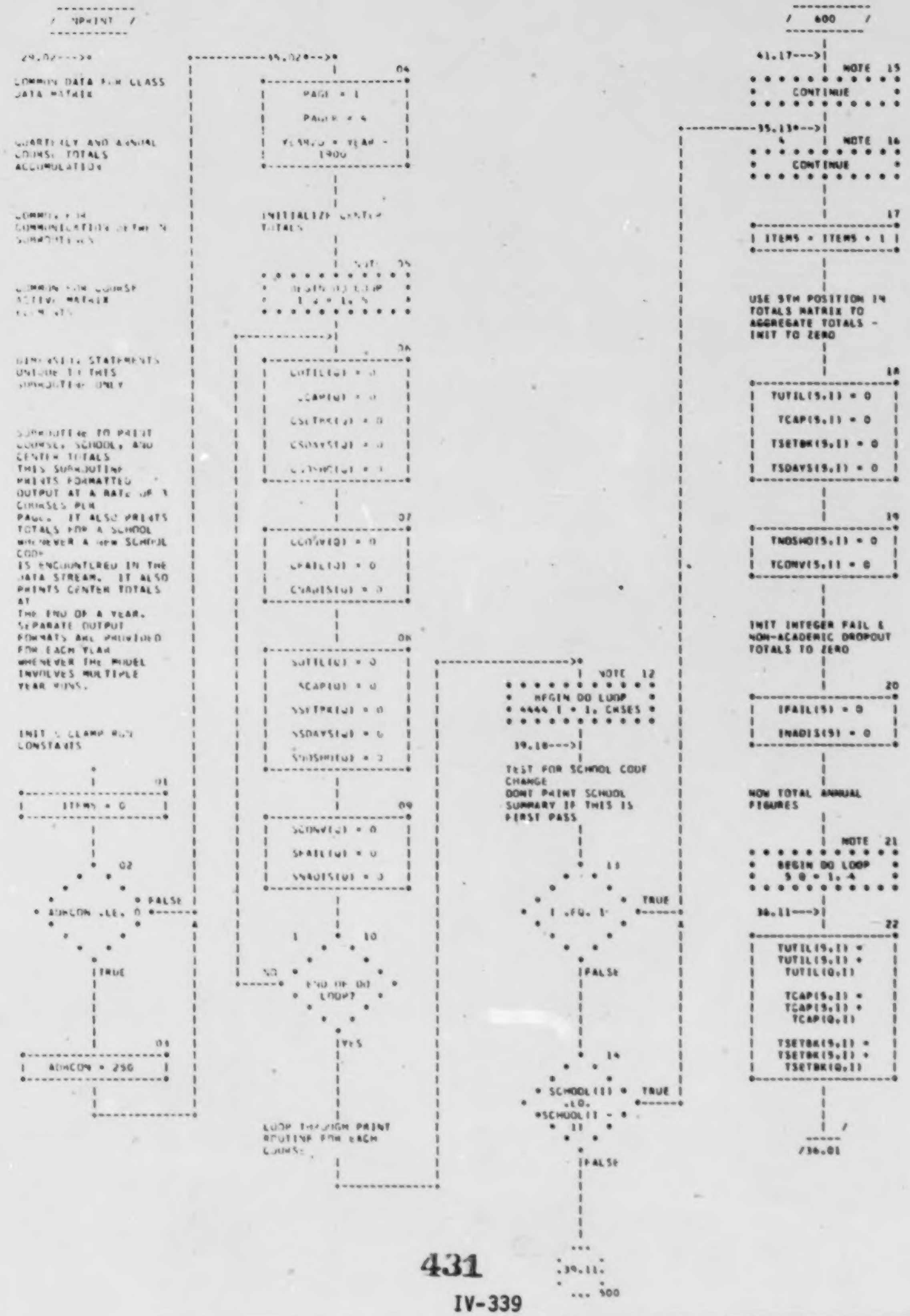

ACTIVE FILE HAS A COURSE ACTIVE AT 'J'. GET COURSE POINTER INTO COURSE MATRIX, SUBTRACT 1000 IF GT 1000
32,06--->
401
01
ITEM = ACTIVE(J)
02
FALSE
ITEM .GT. 1000
TRUE
03
ITEM = ITEM - 1000
FIND LENGTH FOR NEGDAYS CALCULATION. ACTCTR CONTAINS NUMBER OF WEEKS REMAINING TILL CLOSEOUT OF COURSE.
04
LEN = LENA(ITEM) - ACTCTR(J)
TRACE PRINT ROUTINE - PRINT ONLY IF PROPER TRACE FLAG IS SET
05
PREFLG .GT. 0
FALSE
TRUE
06
WRITE TO DEV * VIA FORMAT 4356 FROM THE LIST
NOTE 07
LIST = COP(ITEM), ACTCTR(J), LEN
33,05--->
TEST AOB CONSTANT FOR WHICH METHOD OF CALC STUDENT DAYS
08
AOBCON .GT. 300
TRUE
FALSE
HERE IF CLASS DAYS METHOD USED TO CALCULATE AOB.
09
ACTNEG(J) = LEN*ACTUTL(J)*5.
HERE IF CALANDER DAYS METHOD USED FOR AOB CALCULATION.
450
10
ITEM1 = LEN - 1
TEM = (ITEM1*2) + (LEN*5.)
ACTNEG(J) = TEM*ACTUTL(J)
32,06--->
500
11
END OF DO LOOP?
NO
YES
32
06
HERE IF NO MORE ACTIVE COURSES - EXIT SUBROUTINE
12
NEGFLG = 0
12,08--->
1999
NOTE 13
CONTINUE
14
EXIT

CHART TITLE - SUBROUTINE NPRINT


NPRINT
29.02--->
COMMON DATA FOR CLASS DATA MATRIX
QUARTERLY AND ANNUAL COURSE TOTALS ACCUMULATION
COMMON FOR COMMUNICATION BETWEEN SUBROUTINES
COMMON FOR COURSE ACTIVE MATRIX ELEMENTS
DIMENSION STATEMENTS UNIQUE TO THIS SUBROUTINE ONLY
SUBROUTINE TO PRINT COURSE, SCHOOL, AND CENTER TOTALS THIS SUBROUTINE PRINTS FORMATTED OUTPUT AT A RATE OF 3 COURSES PER PAGE. IT ALSO PRINTS TOTALS FOR A SCHOOL WHENEVER A NEW SCHOOL CODE IS ENCOUNTERED IN THE DATA STREAM. IT ALSO PRINTS CENTER TOTALS AT THE END OF A YEAR. SEPARATE OUTPUT FORMATS ARE PROVIDED FOR EACH YEAR WHENEVER THE MODEL INVOLVES MULTIPLE YEAR RUNS.
INIT & CLAMP RUN CONSTANTS
01
ITEMS = 0
02
ADHCON .LE. 0
FALSE
TRUE
03
ADHCON = 250
35.02*-->
04
PAGE = 1
PAGER = 4
YEARYD = YEAR - 1900
INITIALIZE CENTER TOTALS
NOTE 05
BEGIN DO LOOP
1 J = 1, 5
06
CUTIL(J) = 0
CCAP(J) = 0
CSETRK(J) = 0
CSDAYS(J) = 0
CNOSHO(J) = 0
07
CCONV(J) = 0
CFAIL(J) = 0
CNADIS(J) = 0
08
SUTIL(J) = 0
SCAP(J) = 0
SSETRK(J) = 0
SSDAYS(J) = 0
SNOSHO(J) = 0
09
SCONV(J) = 0
SFAIL(J) = 0
SNADIS(J) = 0
10
END OF DO LOOP?
NO
YES
LOOP THROUGH PRINT ROUTINE FOR EACH COURSE
NOTE 12
BEGIN DO LOOP
4444 I = 1, CRSES
39.18--->
TEST FOR SCHOOL CODE CHANGE
DONT PRINT SCHOOL SUMMARY IF THIS IS FIRST PASS
13
I .EQ. 1
TRUE
FALSE
14
SCHOOL(I) .EQ. SCHOOL(I - 1)
TRUE
FALSE
39.11
500
600
41.17--->
NOTE 15
CONTINUE
35.13*--->
NOTE 16
CONTINUE
17
ITEMS = ITEMS + 1
USE 5TH POSITION IN TOTALS MATRIX TO AGGREGATE TOTALS - INIT TO ZERO
18
TUTIL(5,I) = 0
TCAP(5,I) = 0
TSETRK(5,I) = 0
TSDAYS(5,I) = 0
19
TNOSHO(5,I) = 0
TCONV(5,I) = 0
INIT INTEGER FAIL & NON-ACADEMIC DROPOUT TOTALS TO ZERO
20
IFAIL(5) = 0
INADIS(5) = 0
NOW TOTAL ANNUAL FIGURES
NOTE 21
BEGIN DO LOOP
5 Q = 1, 4
36.11--->
22
TUTIL(5,I) = TUTIL(5,I) + TUTIL(Q,I)
TCAP(5,I) = TCAP(5,I) + TCAP(Q,I)
TSETRK(5,I) = TSETRK(5,I) + TSETRK(Q,I)
/36.01

7/23/7.

CHART TITLE - SUBROUTINE NPRINT

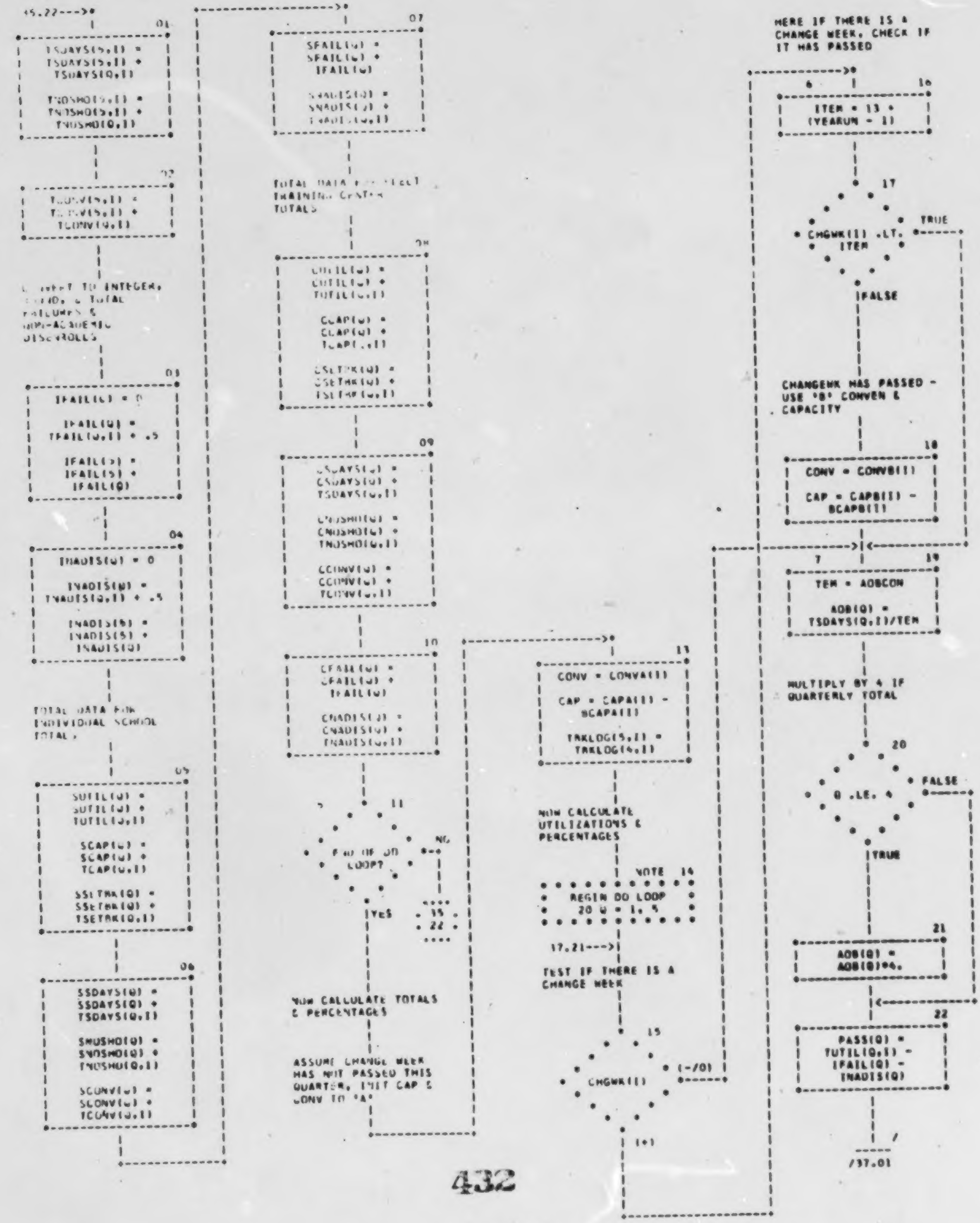
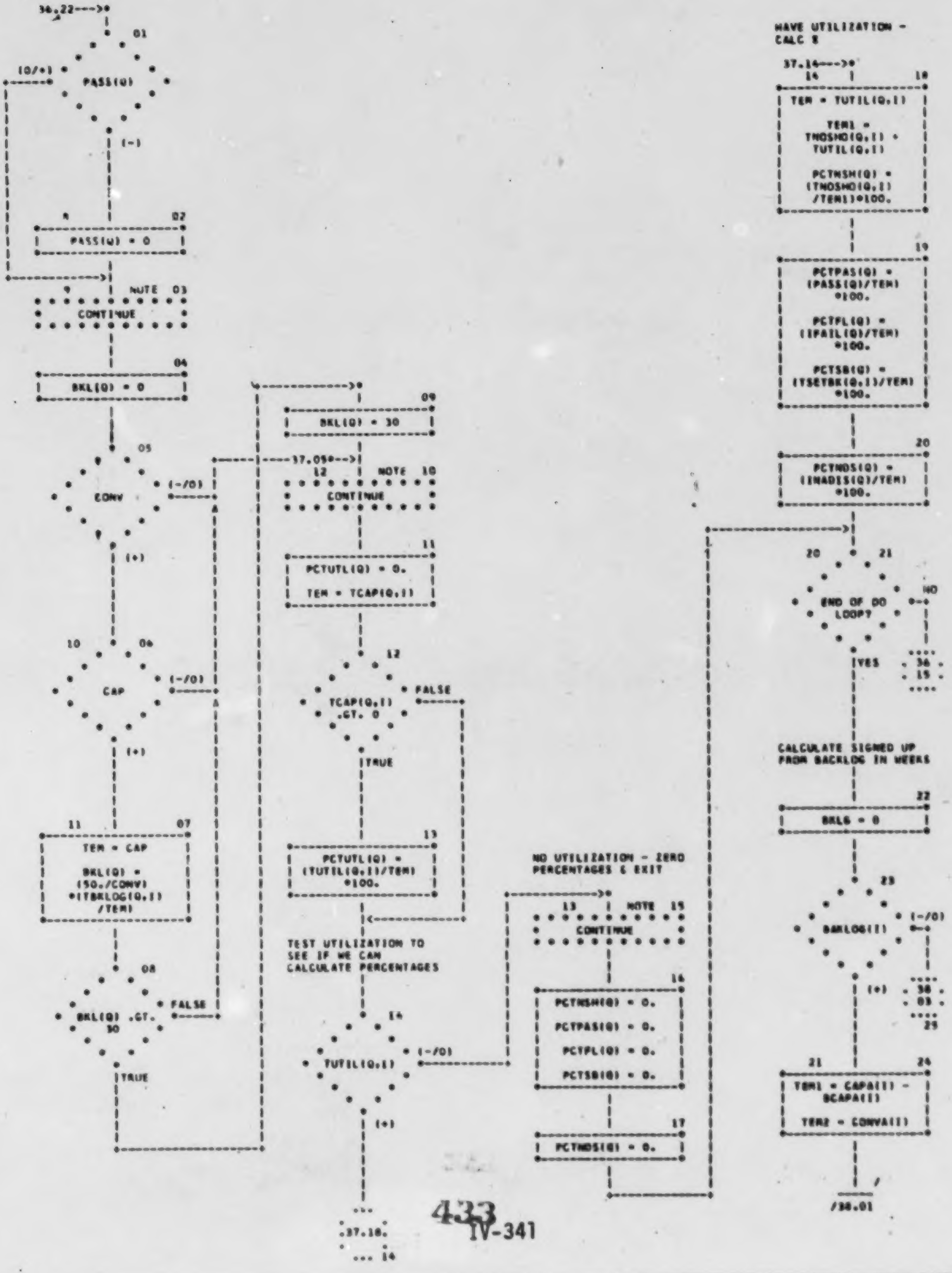
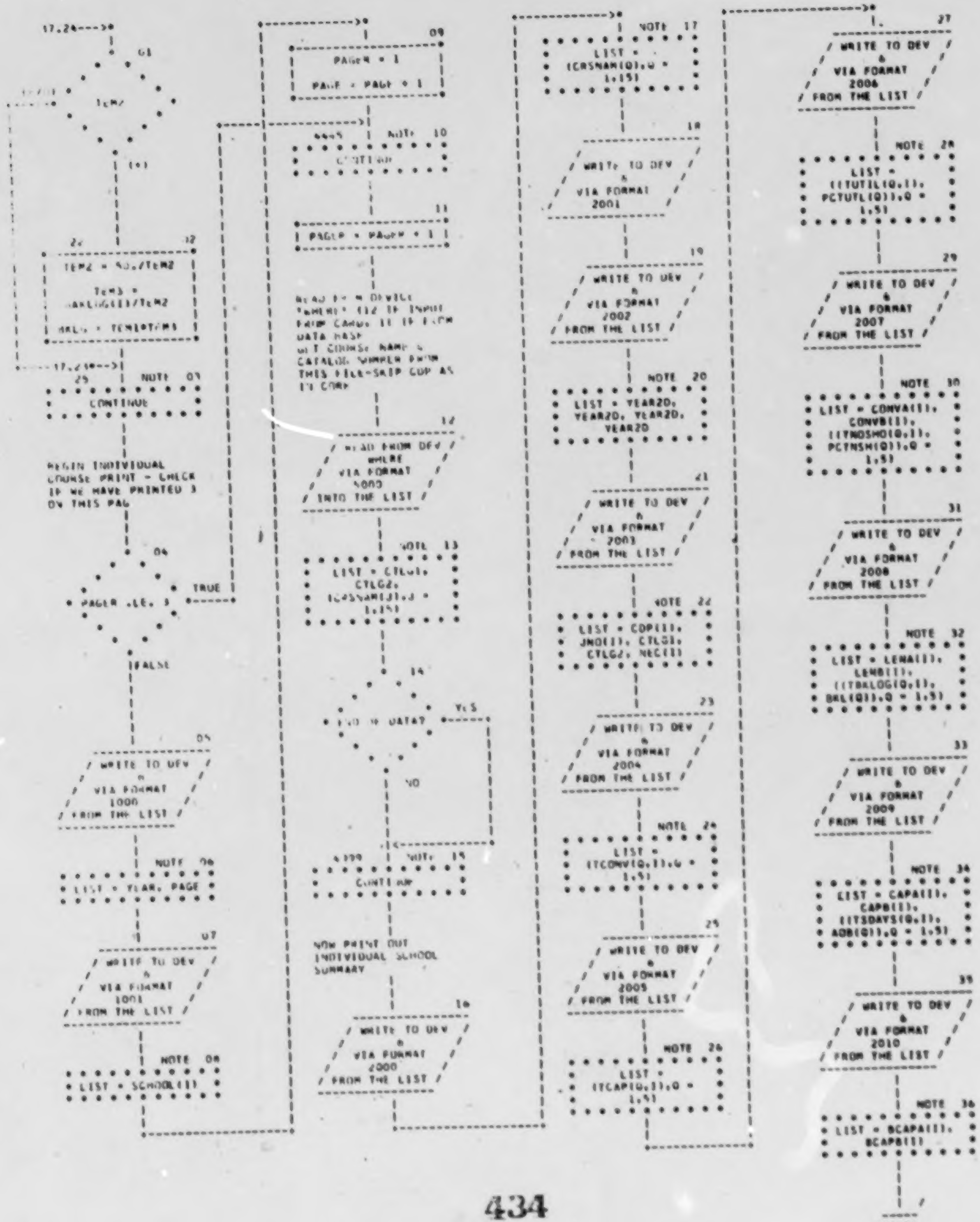

5.22--->
01
TSDAYS(5,I) = TSDAYS(5,I) + TSDAYS(Q,I)
TNOSHO(5,I) = TNOSHO(5,I) + TNOSHO(Q,I)
02
TCONV(5,I) = TCONV(5,I) + TCONV(Q,I)
CONVERT TO INTEGER, ROUND, & TOTAL FAILURES & NON-ACADEMIC DISENROLLS
03
IFAIL(Q) = 0
IFAIL(Q) = TFAIL(Q,I) + .5
IFAIL(5) = IFAIL(5) + IFAIL(Q)
04
INADIS(Q) = 0
INADIS(Q) = TNADIS(Q,I) + .5
INADIS(5) = INADIS(5) + INADIS(Q)
TOTAL DATA FOR INDIVIDUAL SCHOOL TOTALS
05
SUTIL(Q) = SUTIL(Q) + TUTIL(Q,I)
SCAP(Q) = SCAP(Q) + TCAP(Q,I)
SSETHK(Q) = SSETHK(Q) + TSETHK(Q,I)
06
SSDAYS(Q) = SSDAYS(Q) + TSDAYS(Q,I)
SNOSHO(Q) = SNOSHO(Q) + TNOSHO(Q,I)
SCONV(Q) = SCONV(Q) + TCONV(Q,I)
07
SFAIL(Q) = SFAIL(Q) + IFAIL(Q)
SNADIS(Q) = SNADIS(Q) + INADIS(Q,I)
TOTAL DATA FOR SELECT TRAINING CENTER TOTALS
08
CUTIL(Q) = CUTIL(Q) + TUTIL(Q,I)
CCAP(Q) = CCAP(Q) + TCAP(Q,I)
CSETHK(Q) = CSETHK(Q) + TSETHK(Q,I)
09
CSDAYS(Q) = CSDAYS(Q) + TSDAYS(Q,I)
CNOSHO(Q) = CNOSHO(Q) + TNOSHO(Q,I)
CCONV(Q) = CCONV(Q) + TCONV(Q,I)
10
CFAIL(Q) = CFAIL(Q) + IFAIL(Q)
CNADIS(Q) = CNADIS(Q) + INADIS(Q,I)
11
END OF DO LOOP?
NO
5
15
22
YES
NOW CALCULATE TOTALS & PERCENTAGES
ASSUME CHANGE WEEK HAS NOT PASSED THIS QUARTER, SET CAP & CONV TO 'A'
13
CONV = CONVA(I)
CAP = CAPA(I) - BCAPA(I)
TAKLOG(5,I) = TAKLOG(4,I)
NOW CALCULATE UTILIZATIONS & PERCENTAGES
NOTE 14
BEGIN DO LOOP 20 Q = 1, 5
17,21--->
TEST IF THERE IS A CHANGE WEEK
15
CHGWK(I)
(-/0)
(+)
HERE IF THERE IS A CHANGE WEEK. CHECK IF IT HAS PASSED
6
16
ITEM = 13 * (YEARUN - 1)
17
CHGWK(I) .LT. ITEM
TRUE
FALSE
CHANGEWK HAS PASSED - USE 'B' CONVEN & CAPACITY
18
CONV = CONVB(I)
CAP = CAPB(I) - BCAPB(I)
7
19
TEM = AOBCON
AOB(Q) = TSDAYS(Q,I)/TEM
MULTIPLY BY 4 IF QUARTERLY TOTAL
20
Q .LE. 4
FALSE
TRUE
21
AOB(Q) = AOB(Q)*4.
22
PASS(Q) = TUTIL(Q,I) - IFAIL(Q) - INADIS(Q)
/37.01

CHART TITLE - SUBROUTINE MPRINT


36.22--->
01
(0/+)
PASS(Q)
(-)
02
PASS(Q) = 0
NOTE 03
CONTINUE
04
BKL(Q) = 0
05
CONV
(-/0)
(+)
10
06
CAP
(-/0)
(+)
11
07
TEM = CAP
BKL(Q) = (50./CONV) *(TBKLOG(Q,I) /TEM)
08
BKL(Q) .GT. 30
FALSE
TRUE
09
BKL(Q) = 30
37.05--->
12
NOTE 10
CONTINUE
11
PCTUTL(Q) = 0.
TEM = TCAP(Q,I)
12
TCAP(Q,I) .GT. 0
FALSE
TRUE
13
PCTUTL(Q) = (TUTIL(Q,I)/TEM) *100.
TEST UTILIZATION TO SEE IF WE CAN CALCULATE PERCENTAGES
14
TUTIL(Q,I)
(-/0)
(+)
37.18
14
NO UTILIZATION - ZERO PERCENTAGES & EXIT
13
NOTE 15
CONTINUE
16
PCTNSH(Q) = 0.
PCTPAS(Q) = 0.
PCTFL(Q) = 0.
PCTSB(Q) = 0.
17
PCTNOS(Q) = 0.
HAVE UTILIZATION - CALC %
37.14--->
14
18
TEM = TUTIL(Q,I)
TEM1 = TNOSHO(Q,I) + TUTIL(Q,I)
PCTNSH(Q) = (TNOSHO(Q,I) /TEM1)*100.
19
PCTPAS(Q) = (PASS(Q)/TEM) *100.
PCTFL(Q) = (IFAIL(Q)/TEM) *100.
PCTSB(Q) = (TSETBK(Q,I)/TEM) *100.
20
PCTNOS(Q) = (INADIS(Q)/TEM) *100.
20
21
END OF DO LOOP?
NO
36
15
YES
CALCULATE SIGNED UP FROM BACKLOG IN WEEKS
22
BKLG = 0
23
BAKLOG(I)
(-/0)
(+)
38
03
25
21
24
TEM1 = CAPA(I) - BCAPA(I)
TEM2 = CONVA(I)
/38.01

09/23/74

CHART TITLE - SUBROUTINE NPRINT


17,24--->
01
TEM2
(+)
22
02
TEM2 = 50./TEM2
TEM3 = BAKLOG(I)/TEM2
BKLG = TEM1*TEM3
17,24--->
25
NOTE 03
CONTINUE
BEGIN INDIVIDUAL COURSE PRINT - CHECK IF WE HAVE PRINTED 3 ON THIS PAG
04
PAGER .LE. 3
TRUE
FALSE
05
WRITE TO DEV
VIA FORMAT
1000
FROM THE LIST
NOTE 06
LIST = YEAR, PAGE
07
WRITE TO DEV
VIA FORMAT
1001
FROM THE LIST
NOTE 08
LIST = SCHOOL(I)
09
PAGER = 1
PAGE = PAGE + 1
4445
NOTE 10
CONTINUE
11
PAGER = PAGER + 1
READ FROM DEVICE "WHERE" (12 IF INPUT FROM CARDS, 11 IF FROM DATA BASE
GET COURSE NAME & CATALOG NUMBER FROM THIS FILE-SKIP COP AS IT COME
12
READ FROM DEV
WHERE
VIA FORMAT
5000
INTO THE LIST
NOTE 13
LIST = CTLG1, CTLG2, (CRSNAM(J),J = 1,15)
14
END OF DATA?
YES
NO
4399
NOTE 15
CONTINUE
NOW PRINT OUT INDIVIDUAL SCHOOL SUMMARY
16
WRITE TO DEV
VIA FORMAT
2000
FROM THE LIST
NOTE 17
LIST = (CRSNAM(Q),Q = 1,15)
18
WRITE TO DEV
VIA FORMAT
2001
19
WRITE TO DEV
VIA FORMAT
2002
FROM THE LIST
NOTE 20
LIST = YEAR20, YEAR20, YEAR20, YEAR20
21
WRITE TO DEV
VIA FORMAT
2003
FROM THE LIST
NOTE 22
LIST = COP(I), JNO(I), CTLG1, CTLG2, NEC(I)
23
WRITE TO DEV
VIA FORMAT
2004
FROM THE LIST
NOTE 24
LIST = (TCONV(Q,I),Q = 1,5)
25
WRITE TO DEV
VIA FORMAT
2005
FROM THE LIST
NOTE 26
LIST = (TCAP(Q,I),Q = 1,5)
27
WRITE TO DEV
VIA FORMAT
2006
FROM THE LIST
NOTE 28
LIST = ((TUTIL(Q,I), PCTUTL(Q)),Q = 1,5)
29
WRITE TO DEV
VIA FORMAT
2007
FROM THE LIST
NOTE 30
LIST = CONVA(I), CONVB(I), ((TNOSHO(Q,I), PCTNSH(Q)),Q = 1,5)
31
WRITE TO DEV
VIA FORMAT
2008
FROM THE LIST
NOTE 32
LIST = LENA(I), LENB(I), ((TBKLOG(Q,I), BKL(Q)),Q = 1,5)
33
WRITE TO DEV
VIA FORMAT
2009
FROM THE LIST
NOTE 34
LIST = CAPA(I), CAPB(I), ((TSDAYS(Q,I), ADB(Q)),Q = 1,5)
35
WRITE TO DEV
VIA FORMAT
2010
FROM THE LIST
NOTE 36
LIST = BCAPA(I), BCAPB(I)
/39.01

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04/23/74 AUTOFLOW CHART SET - PAGE

CHART TITLE - SUBROUTINE YPRINT

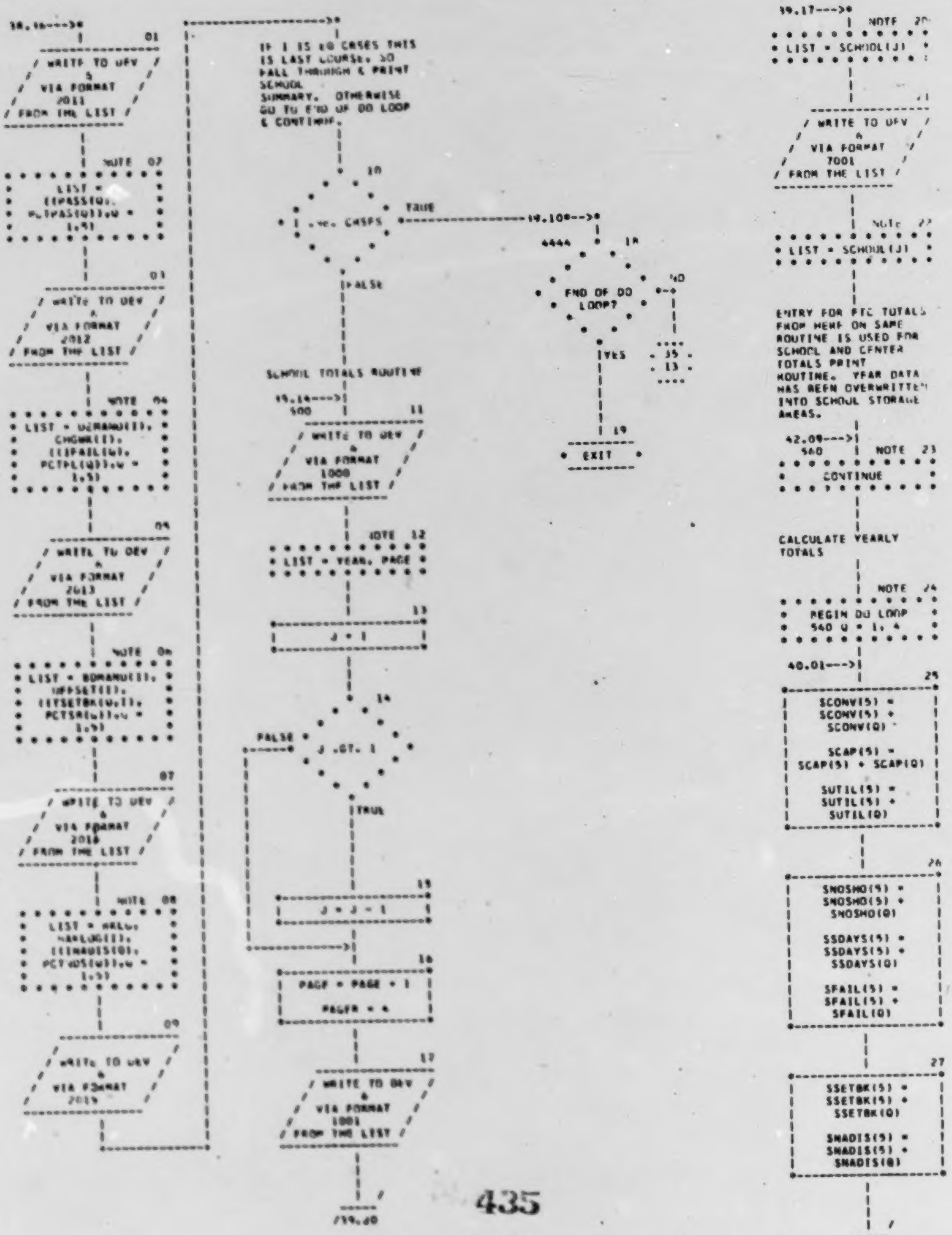
38.16--->
01
WRITE TO DEV 5 VIA FORMAT 2011 FROM THE LIST
NOTE 02
LIST = ((PASS(Q), PCTPAS(Q)),Q = 1,5))
03
WRITE TO DEV 6 VIA FORMAT 2012 FROM THE LIST
NOTE 04
LIST = UZMANU(I), CHGWK(I), ((IPAIL(Q), PCTPL(Q)),Q = 1,5))
05
WRITE TO DEV 6 VIA FORMAT 2013 FROM THE LIST
NOTE 06
LIST = BDMANU(I), UPPSET(I), ((TSETBK(Q,I), PCTSR(Q)),Q = 1,5))
07
WRITE TO DEV 6 VIA FORMAT 2014 FROM THE LIST
NOTE 08
LIST = AALG, NAKLOG(I), ((INADIS(Q), PCTADS(Q)),Q = 1,5))
09
WRITE TO DEV 6 VIA FORMAT 2019
IF I IS EQ CASES THIS IS LAST COURSE, SO FALL THROUGH & PRINT SCHOOL SUMMARY. OTHERWISE GO TO END OF DO LOOP & CONTINUE.
10
I .NE. CASES
TRUE
FALSE
39.10--->
4444
18
END OF DO LOOP?
40
YES
35
13
19
EXIT
SCHOOL TOTALS ROUTINE
39.14--->
500
11
WRITE TO DEV 6 VIA FORMAT 1000 FROM THE LIST
NOTE 12
LIST = YEAR, PAGE
13
J = 1
14
J .GT. 1
FALSE
TRUE
15
J = J - 1
16
PAGE = PAGE + 1
PAGER = 4
17
WRITE TO DEV 6 VIA FORMAT 1001 FROM THE LIST
/39.20
39.17--->
NOTE 20
LIST = SCHOOL(J)
21
WRITE TO DEV 6 VIA FORMAT 7001 FROM THE LIST
NOTE 22
LIST = SCHOOL(J)
ENTRY FOR ETC TOTALS FROM HERE ON SAME ROUTINE IS USED FOR SCHOOL AND CENTER TOTALS PRINT ROUTINE. YEAR DATA HAS BEEN OVERWRITTEN INTO SCHOOL STORAGE AREAS.
42.09--->
560
NOTE 23
CONTINUE
CALCULATE YEARLY TOTALS
NOTE 24
BEGIN DO LOOP 540 Q = 1, 4
40.01--->
25
SCONV(5) = SCONV(5) + SCONV(Q)
SCAP(5) = SCAP(5) + SCAP(Q)
SUTIL(5) = SUTIL(5) + SUTIL(Q)
26
SNOSHO(5) = SNOSHO(5) + SNOSHO(Q)
SSDAYS(5) = SSDAYS(5) + SSDAYS(Q)
SFAIL(5) = SFAIL(5) + SFAIL(Q)
27
SSETBK(5) = SSETBK(5) + SSETBK(Q)
SNADIS(5) = SNADIS(5) + SNADIS(Q)
/40.01

CHART TITLE - SUBROUTINE NPRINT

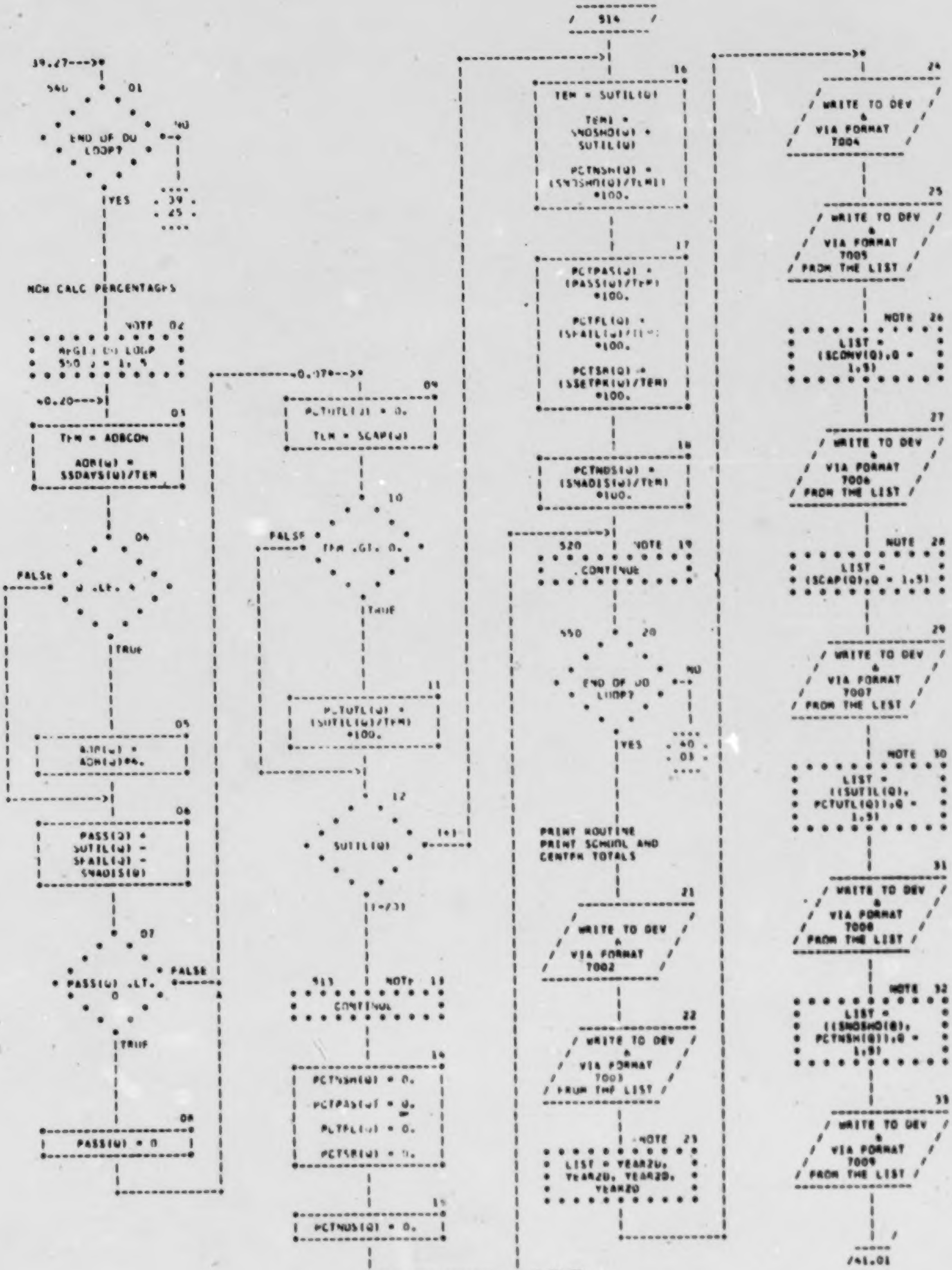
39.27
550 01
END OF DO LOOP?
NO
39 25
YES
NOW CALC PERCENTAGES
NOTE 02
BEGIN DO LOOP 550 Q = 1, 5
40.20
03
TEM = ADBCON
ADR(Q) = SSDAYS(Q)/TEM
04
FALSE
Q .LE. 4
TRUE
05
ADR(Q) = ADR(Q)*4.
06
PASS(Q) = SUTIL(Q) - SFAIL(Q) - SNADIS(Q)
07
PASS(Q) .LT. 0
FALSE
TRUE
08
PASS(Q) = 0
0.17
09
PCTUTL(Q) = 0.
TEM = SCAP(Q)
10
FALSE
TEM .GT. 0.
TRUE
11
PCTUTL(Q) = (SUTIL(Q)/TEM) *100.
12
SUTIL(Q)
(+)
(-/0)
513 NOTE 13
CONTINUE
14
PCTNSH(Q) = 0.
PCTPAS(Q) = 0.
PCTFL(Q) = 0.
PCTSR(Q) = 0.
15
PCTNDS(Q) = 0.
514
16
TEM = SUTIL(Q)
TEM1 = SNOSHO(Q) + SUTIL(Q)
PCTNSH(Q) = (SNOSHO(Q)/TEM1) *100.
17
PCTPAS(Q) = (PASS(Q)/TEM) *100.
PCTFL(Q) = (SFAIL(Q)/TEM) *100.
PCTSR(Q) = (SSETPR(Q)/TEM) *100.
18
PCTNDS(Q) = (SNADIS(Q)/TEM) *100.
520 NOTE 19
CONTINUE
550 20
END OF DO LOOP?
NO
40 03
YES
PRINT ROUTINE
PRINT SCHOOL AND CENTER TOTALS
21
WRITE TO DEV 6 VIA FORMAT 7002
22
WRITE TO DEV 6 VIA FORMAT 7003 FROM THE LIST
NOTE 23
LIST = YEAR20, YEAR20, YEAR20, YEAR20
24
WRITE TO DEV 6 VIA FORMAT 7004
25
WRITE TO DEV 6 VIA FORMAT 7005 FROM THE LIST
NOTE 26
LIST = (SCONV(Q),Q = 1,5)
27
WRITE TO DEV 6 VIA FORMAT 7006 FROM THE LIST
NOTE 28
LIST = (SCAP(Q),Q = 1,5)
29
WRITE TO DEV 6 VIA FORMAT 7007 FROM THE LIST
NOTE 30
LIST = ((SUTIL(Q), PCTUTL(Q)),Q = 1,5)
31
WRITE TO DEV 6 VIA FORMAT 7008 FROM THE LIST
NOTE 32
LIST = ((SNOSHO(Q), PCTNSH(Q)),Q = 1,5)
33
WRITE TO DEV 6 VIA FORMAT 7009 FROM THE LIST
41.01

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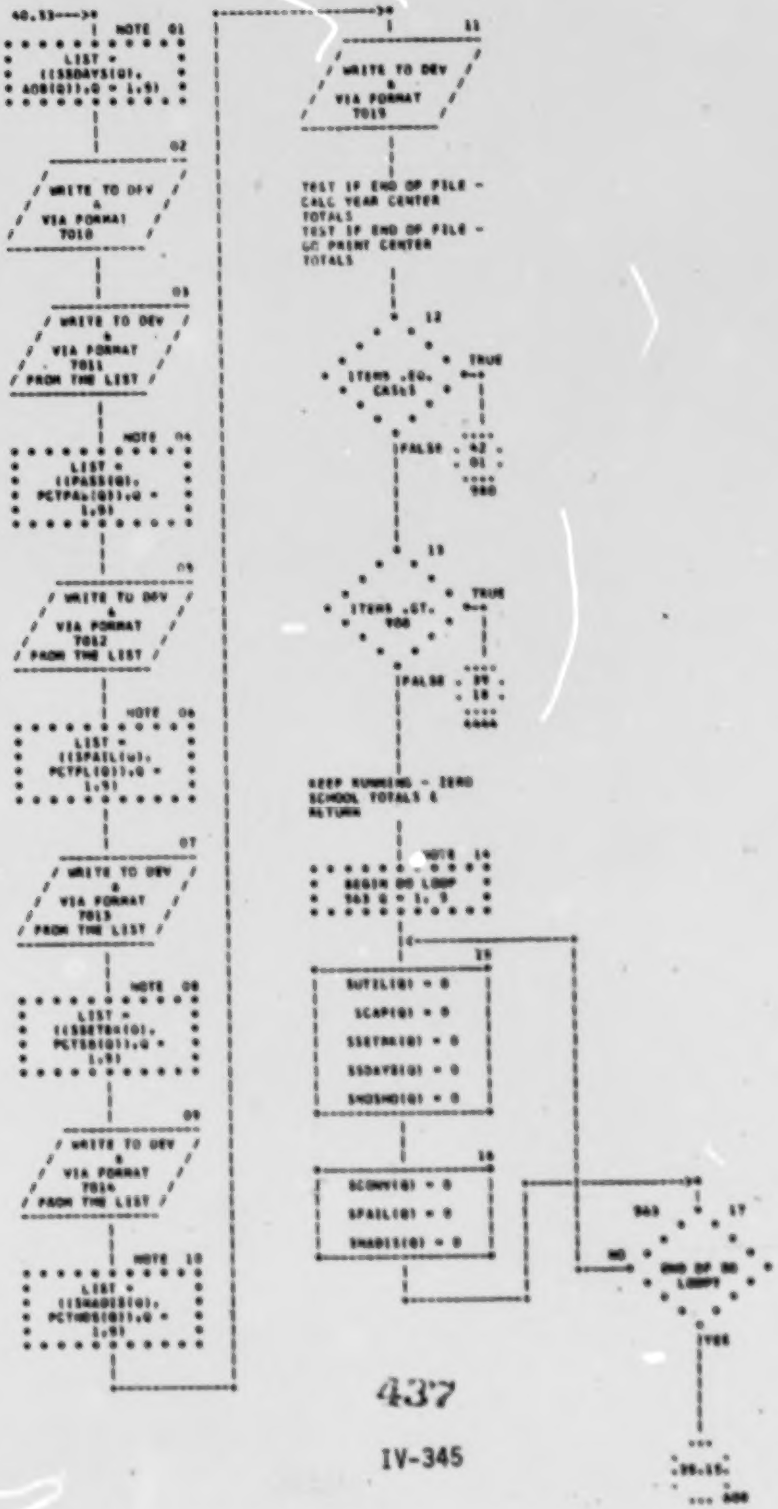
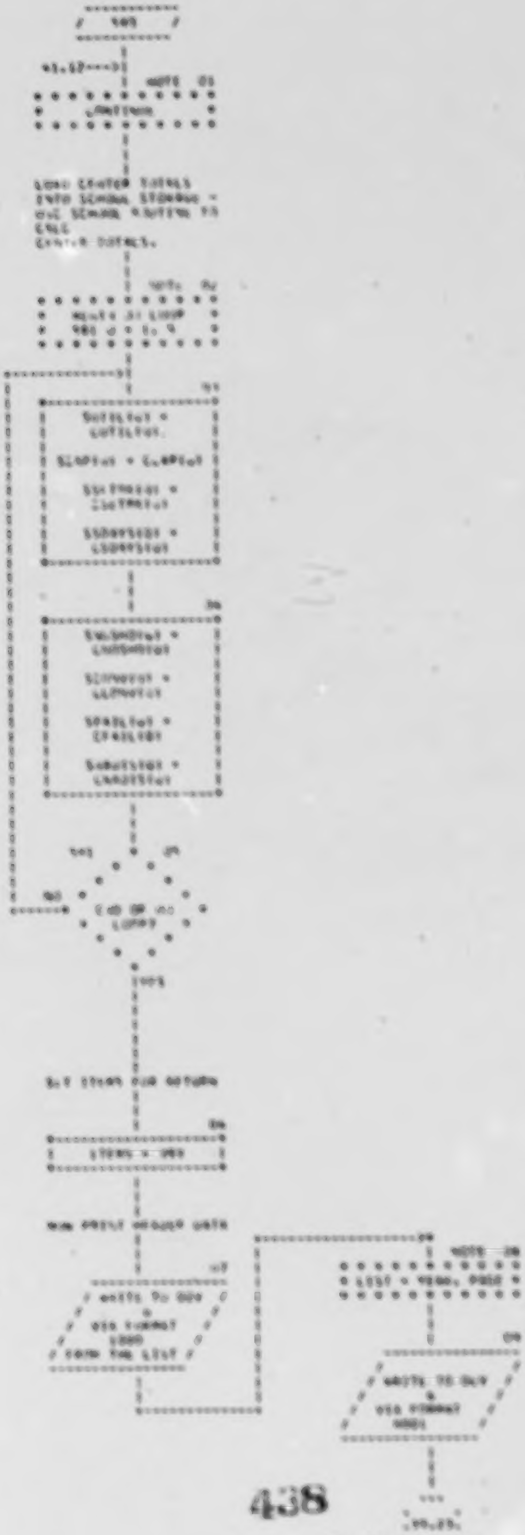
CHART TITLE - SUBROUTINE NPRINT


40.33
NOTE 01
LIST = ((SSDAYS(Q), ADB(Q)),Q = 1,5)
02
WRITE TO DEV & VIA FORMAT T010
03
WRITE TO DEV & VIA FORMAT T011 FROM THE LIST
NOTE 04
LIST = ((PASS(Q), PCTPAS(Q)),Q = 1,5)
05
WRITE TO DEV & VIA FORMAT T012 FROM THE LIST
NOTE 06
LIST = ((SFAIL(Q), PCTFL(Q)),Q = 1,5)
07
WRITE TO DEV & VIA FORMAT T013 FROM THE LIST
NOTE 08
LIST = ((SSETBK(Q), PCTSB(Q)),Q = 1,5)
09
WRITE TO DEV & VIA FORMAT T014 FROM THE LIST
NOTE 10
LIST = ((SHADIS(Q), PCTHDS(Q)),Q = 1,5)
11
WRITE TO DEV & VIA FORMAT T019
TEST IF END OF FILE - CALC YEAR CENTER TOTALS
TEST IF END OF FILE - GO PRINT CENTER TOTALS
12
ITEMS .EQ. CASES
TRUE
FALSE
42
01
900
13
ITEMS .GT. 900
TRUE
FALSE
39
18
KEEP RUNNING - ZERO SCHOOL TOTALS & RETURN
NOTE 14
BEGIN DO LOOP 563 Q = 1, 5
15
SUTIL(Q) = 0
SCAP(Q) = 0
SSETBK(Q) = 0
SSDAYS(Q) = 0
SHOSHO(Q) = 0
16
SCONV(Q) = 0
SFAIL(Q) = 0
SHADIS(Q) = 0
563
17
END OF DO LOOP?
NO
YES
38.15
400

437

CHART TITLE - SUBROUTINE [illegible]


NOTE 01
CONTINUE
YES
NO
YES

SECTION V

DESIGN OF TRAINING SYSTEMS DATA BASE

DOTS DATA BASE DESCRIPTION

The data base consists of two related subfiles, the course file and the instructor file. Each is defined to Data Language/1[1] (DL/1) as a data base. However, because of their interrelationship, this report will refer to them as "files," and reserve the term "data base" for the system as a whole.

The course file consists of a number of parent segments, one for each course, which may contain any number (or none) of subordinate segments. There are four types of subsegments; the data in each represent one particular class of information about the parent course.

The instructor file also consists of a number of parent segments, one for each instructor, but no subordinate segments exist. For this reason, the instructor file could have been implemented as an ordinary Indexed Sequential Access Method (ISAM) data set. This was not done in order to preserve uniformity in accessing the data base, and to make it possible to define subsegments in the future. This capability is important because of the developmental nature of the DOTS project.

The course file is related to the instructor file through the INST subsegment of the course file. This segment describes each instructor who is qualified to teach the parent course, and contains the instructor's name, number, and several other fields. Additional information on each instructor is contained in the instructor file. To locate this information, the file is searched using the instructor number obtained from the course file as a key. An example of the use of cross-indexing is found in the SCRR model interface, where an instructor's availability must be obtained from the instructor file.

The files are maintained with a set of programs which enable the user to load, update, print, unload, and restore the contents of each file. In addition, the input to the course file load program is screened by a pre-sort to eliminate improperly formatted data. Also, if the user wishes to select a subset of the data base for restoration; e.g., to run the SCRR model from a scratch data base, a select program has been provided to delete all but a specified set of records from the unloaded data base. The remaining records are then used to create a scratch data base.

DATA BASE SYSTEM FLOW. There are four functions to be performed during normal operation and maintenance of the data base:

a. Initial loading of the data files.

b. Updating the data files to replace obsulete information.

c. Error correcting.

d. Reorganizing the data files (to eliminate blanks) for greater operating efficiency.

---

[1] Data Language/1, IBM Program No. 360D-01.6.007; 1968.

To provide the capability to perform these functions, a set of data base utility programs have been developed. These utility programs, together with the actual data files and the DL/1 system, comprise the overall data base system. Figure V-1 presents the system flow.

DATA BASE ORGANIZATION

Because of the hierarchical structure of the course file, the decision was made to use DL/1, an IBM Type III Program Product. DL/1 essentially frees the programmer from the needless problems of physical data set organization, and enables him to define a data base in terms of logical file structure. The user's program requests logical records (segments) from the batch system, which passes the record to the program. The programmer need not be aware of how the data are stored physically.

Before a data base can be created and used, two control blocks must be generated to describe the data base and application program characteristics. These control blocks are called the Data Base Descriptor (DBD) and Program Specification Block (PSB). They are generated using the macro facility of the OS/360 Assembler. The resultant control blocks are processed by the OS/360 Linkage Editor and placed in either the system DBD library or PSB library.

A DBD describes the characteristics of a data base, such as the size and subfields of each logical segment, the relationship existing between segments, and the type of data base being used. Two DBD's exist for the DOTS data base: one for the course file and one for the instructor file. DBD generation input for the DOTS files is shown in Figure V-2.

A PSB describes the characteristics and informs the system of the "access rights" of an application program. The PSB contains information specifying which files a program may use, which segments within that file the program may access, and whether or not the program may update the file. If two or more programs have identical characteristics, they may utilize the same PSB. An example of such sharing of a PSB is found between the instructor file print and unload programs. Both programs use the instructor file, and both programs are allowed to read the files. The PSB generation inputs for the DOTS application programs are shown in Figure V-3.

The relationship between an application program and the data base may be seen in Figure V-4. The program makes requests to the data base through a language interface module. This module decodes the request and passes it to the file management routines, which fulfill the request and return to the interface module. The interface module then returns the requested segment and a return code describing the status of the data base request.

Figure V-5 shows the structure of the course file. This file is organized as a two-level hierarchical file. The parent segment, level 0, provides the top level course identification with non-repetitive descriptive data. The remaining four segments provide detailed and possibly repetitive information concerning each course. Table V-1 gives a comprehensive description of the course file and the data within it.

BEST COPY AVAILABLE

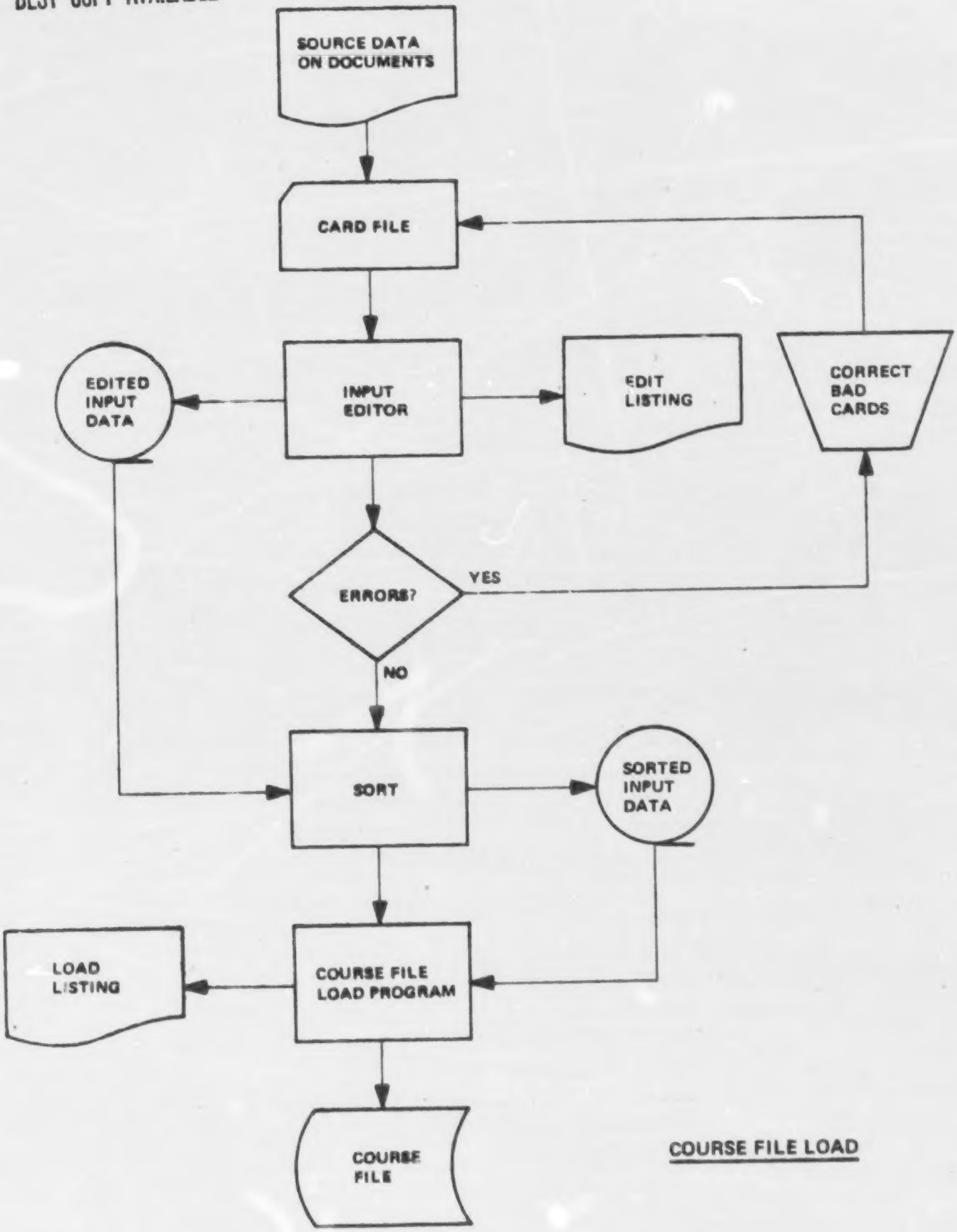

SOURCE DATA ON DOCUMENTS
CARD FILE
INPUT EDITOR
EDITED INPUT DATA
EDIT LISTING
CORRECT BAD CARDS
ERRORS?
YES
NO
SORT
SORTED INPUT DATA
COURSE FILE LOAD PROGRAM
LOAD LISTING
COURSE FILE
COURSE FILE LOAD

FIGURE V-1 DATA BASE SYSTEM FLOW

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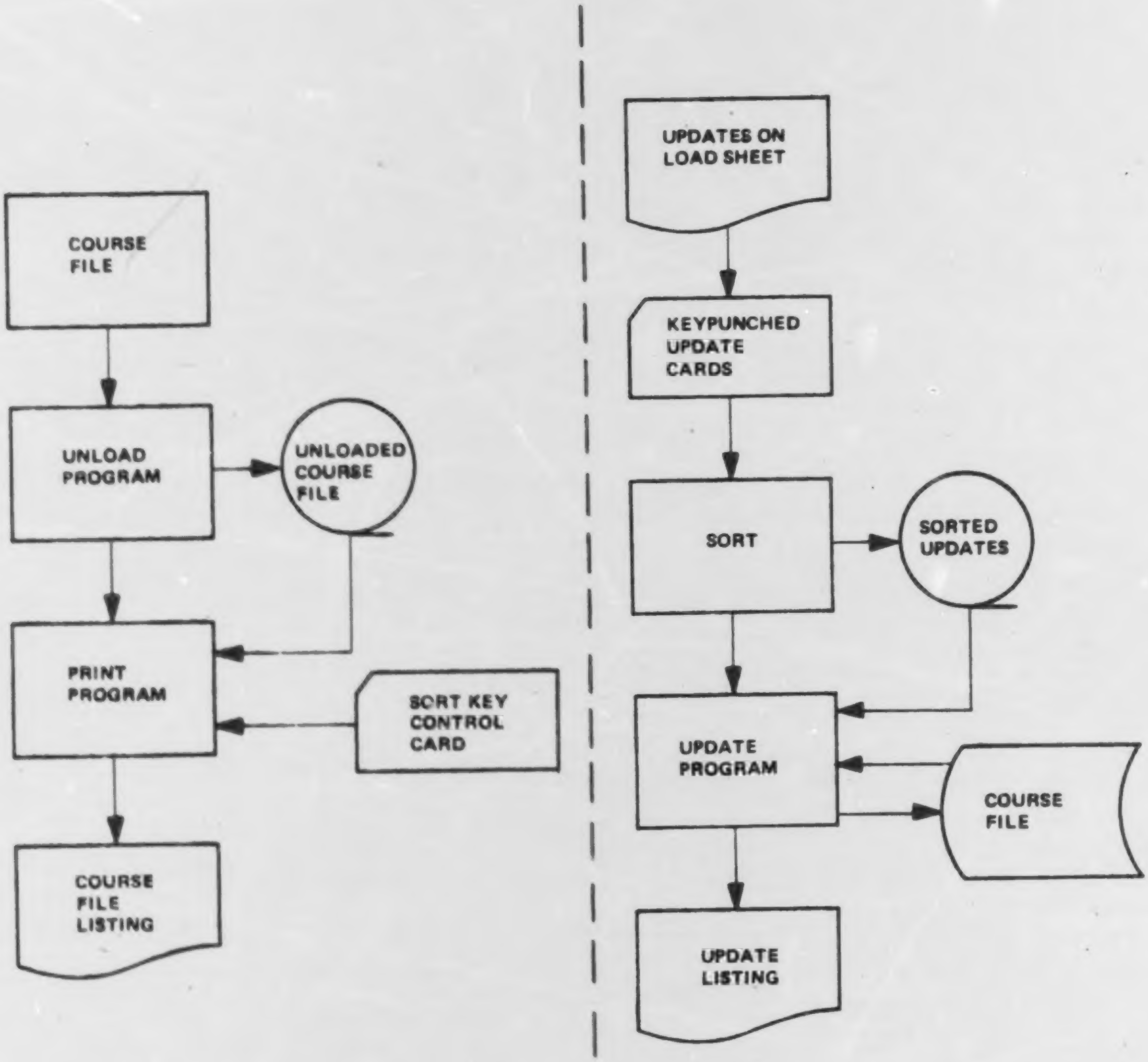
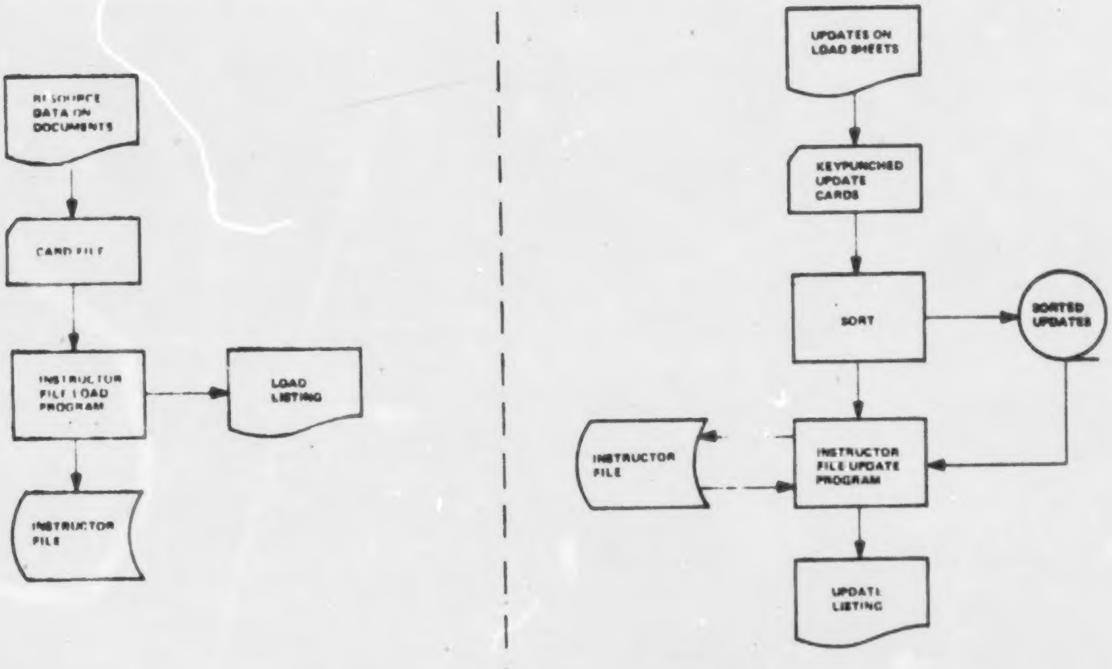
BEST COPY AVAILABLE


COURSE FILE
UNLOAD PROGRAM
UNLOADED COURSE FILE
PRINT PROGRAM
SORT KEY CONTROL CARD
COURSE FILE LISTING
UPDATES ON LOAD SHEET
KEYPUNCHED UPDATE CARDS
SORT
SORTED UPDATES
UPDATE PROGRAM
COURSE FILE
UPDATE LISTING

COURSE FILE PRINT

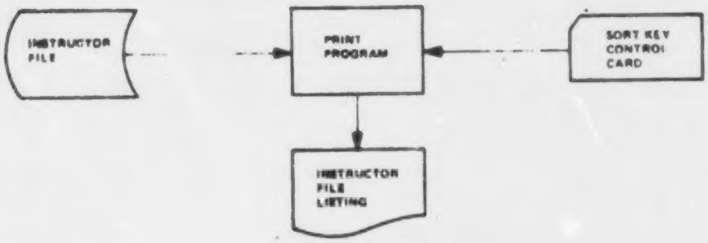
COURSE FILE UPDATE

FIGURE V-1 (CONTINUED)

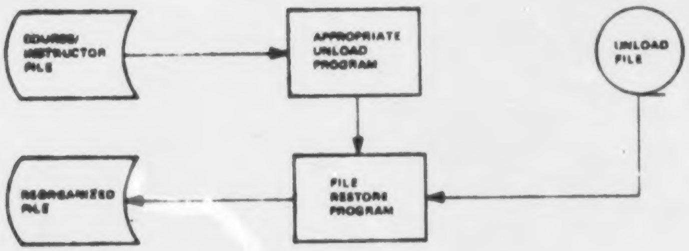

RESOURCE DATA ON DOCUMENTS
CARD FILE
INSTRUCTOR FILE LOAD PROGRAM
LOAD LISTING
INSTRUCTOR FILE
UPDATES ON LOAD SHEETS
KEYPUNCHED UPDATE CARDS
SORT
SORTED UPDATES
INSTRUCTOR FILE
INSTRUCTOR FILE UPDATE PROGRAM
UPDATE LISTING

INSTRUCTOR FILE LOAD

INSTRUCTOR FILE UPDATE


INSTRUCTOR FILE
PRINT PROGRAM
SORT KEY CONTROL CARD
INSTRUCTOR FILE LISTING

INSTRUCTOR FILE PRINT


COURSE/INSTRUCTOR FILE
APPROPRIATE UNLOAD PROGRAM
UNLOAD FILE
REORGANIZED FILE
FILE RESTORE PROGRAM

FILE REORGANIZATION

FIGURE V-1 (CONTINUED)

```
TITLE 'PHASE II COURSE FILE - REV. 2.1'
DBD   NAME=CRSEFILE,ACCESS=ISAM
DMAN  DDI=CRSEDATA,DEVI=2314,DLIOF=CRSEOVER
SEGM  NAME=COURSE,PARENT=0,FREQ=500,BYTES=130
FLDK  NAME=CRSNO,TYPE=C,BYTES=4,START=11
FLD   NAME=PREFIX,TYPE=C,BYTES=10,START=1
FLD   NAME=CRSNAME,TYPE=C,BYTES=60,START=15
FLD   NAME=DEPT,TYPE=C,BYTES=6,START=75
FLD   NAME=LENGTH,TYPE=P,BYTES=2,START=81
FLD   NAME=QUALTIME,TYPE=P,BYTES=2,START=83
FLD   NAME=BUPCAP,TYPE=P,BYTES=2,START=85
FLD   NAME=INSTCAP,TYPE=P,BYTES=2,START=87
FLD   NAME=CRSTYPE,TYPE=P,BYTES=1,START=89
FLD   NAME=MINCON,TYPE=P,BYTES=2,START=90
FLD   NAME=CHNGDATE,TYPE=P,BYTES=3,START=92
FLD   NAME=OFFSET,TYPE=P,BYTES=3,START=95
FLD   NAME=NBUPCAP,TYPE=P,BYTES=2,START=98
FLD   NAME=NINSTCAP,TYPE=P,BYTES=2,START=100
FLD   NAME=NMINCON,TYPE=P,BYTES=2,START=102
FLD   NAME=NLENGTH,TYPE=P,BYTES=2,START=104
FLD   NAME=NECAWARD,TYPE=C,BYTES=4,START=106
FLD   NAME=WAIT,TYPE=P,BYTES=2,START=110
FLD   NAME=JNO,TYPE=C,BYTES=4,START=112
FLD   NAME=DEMAND,TYPE=P,BYTES=15,START=116
SEGM  NAME=INST,PARENT=COURSE,FREQ=20,BYTES=22
FLDK  NAME=INSTNO,TYPE=P,BYTES=2,START=1
FLD   NAME=INSTNAME,TYPE=C,BYTES=15,START=3
FLD   NAME=PERQUAL,TYPE=P,BYTES=2,START=18
FLD   NAME=CURR,TYPE=C,BYTES=1,START=20
FLD   NAME=INGRP,TYPE=P,BYTES=2,START=21
SEGM  NAME=RATIOS,PARENT=COURSE,FREQ=4,BYTES=12
FLDK  NAME=INDEX,TYPE=P,BYTES=2,START=1
FLD   NAME=RATIO,TYPE=P,BYTES=2,START=3
FLD   NAME=NUMINST,TYPE=P,BYTES=2,START=5
FLD   NAME=CONTHRS,TYPE=P,BYTES=3,START=7
FLD   NAME=TYPE,TYPE=P,BYTES=1,START=10
FLD   NAME=RATGRP,TYPE=P,BYTES=2,START=11
SEGM  NAME=RELCRS,PARENT=COURSE,FREQ=5,BYTES=6
FLDK  NAME=RELKEY,TYPE=C,BYTES=6,START=1
FLD   NAME=REL,TYPE=C,BYTES=4,START=1
FLD   NAME=RELGRP,TYPE=C,BYTES=2,START=5
SEGM  NAME=CLSRM,PARENT=COURSE,FREQ=6,BYTES=17
FLDK  NAME=CLASSRM,TYPE=C,BYTES=8,START=1
FLD   NAME=BLDG,TYPE=C,BYTES=5,START=1
FLD   NAME=ROOM,TYPE=C,BYTES=3,START=6
FLD   NAME=RMCAP,TYPE=P,BYTES=2,START=9
FLD   NAME=RMTYPE,TYPE=P,BYTES=1,START=11
FLD   NAME=REQHRS,TYPE=P,BYTES=3,START=12
FLD   NAME=AVAILHRS,TYPE=P,BYTES=3,START=15
SEGM  NAME=STDATA,PARENT=COURSE,FREQ=6,BYTES=4
FLDK  NAME=TYPE,TYPE=P,BYTES=2,START=1
FLD   NAME=FACTOR,TYPE=P,BYTES=2,START=3
SEGM  NAME=CMPLXGRP,PARENT=COURSE,FREQ=6,BYTES=4
FLDK  NAME=TYPE,TYPE=P,BYTES=2,START=1
FLD   NAME=FACTOR,TYPE=P,BYTES=2,START=3
EJECT
DBDGEN
FINISH
END
```

```
TITLE 'PHASE II INSTRUCTOR FILE - REV. 2.0'
DBD   NAME=INSTFILE,ACCESS=ISAM
DMAN  DDI=INSTDATA,DEVI=2314,DLIOF=INSTOVER
SEGM  NAME=INSTRUCT,PARENT=0,FREQ=500,BYTES=43
FLDK  NAME=NUMBER,TYPE=P,BYTES=2,START=1
FLD   NAME=NAME,TYPE=C,BYTES=15,START=3
FLD   NAME=INITIALS,TYPE=C,BYTES=2,START=18
FLD   NAME=RATE,TYPE=C,BYTES=5,START=20
FLD   NAME=DEPT,TYPE=C,BYTES=6,START=25
FLD   NAME=REPORT,TYPE=C,BYTES=6,START=31
FLD   NAME=ROTATE,TYPE=C,BYTES=4,START=37
FLD   NAME=AVAIL,TYPE=P,BYTES=3,START=41
EJECT
DBDGEN
FINISH
END
```

FIGURE V-2 DATA CASE DESCRIPTORS FOR COURSE AND INSTRUCTOR FILES

```
PCB     TYPE=DB,DBDNAME=CRSEFILE,PROCOPT=L,KEYLEN=12
SENSEG COURSE
SENSEG INST,COURSE
SENSEG RATIOS,COURSE
SENSEG RELCRS,COURSE
SENSEG CLSRM,COURSE
SENSEG STDATA,COURSE
SENSEG CMPLXGRP,COURSE
PSBGEN LANG=PL/I,PSBNAME=CRSELOAD
END


PCB     TYPE=DB,DBDNAME=CRSEFILE,PROCOPT=G,KEYLEN=12
SENSEG COURSE
SENSEG INST,COURSE
SENSEG RATIOS,COURSE
SENSEG RELCRS,COURSE
SENSEG CLSRM,COURSE
SENSEG STDATA,COURSE
SENSEG CMPLXGRP,COURSE
PSBGEN LANG=PL/I,PSBNAME=CRSEDUMP
END


PCB     TYPE=DB,DBDNAME=CRSEFILE,PROCOPT=A,KEYLEN=12
SENSEG COURSE
SENSEG INST,COURSE
SENSEG RATIOS,COURSE
SENSEG RELCRS,COURSE
SENSEG CLSRM,COURSE
SENSEG STDATA,COURSE
SENSEG CMPLXGRP,COURSE
PSBGEN LANG=PL/I,PSBNAME=CRSEUPT
END

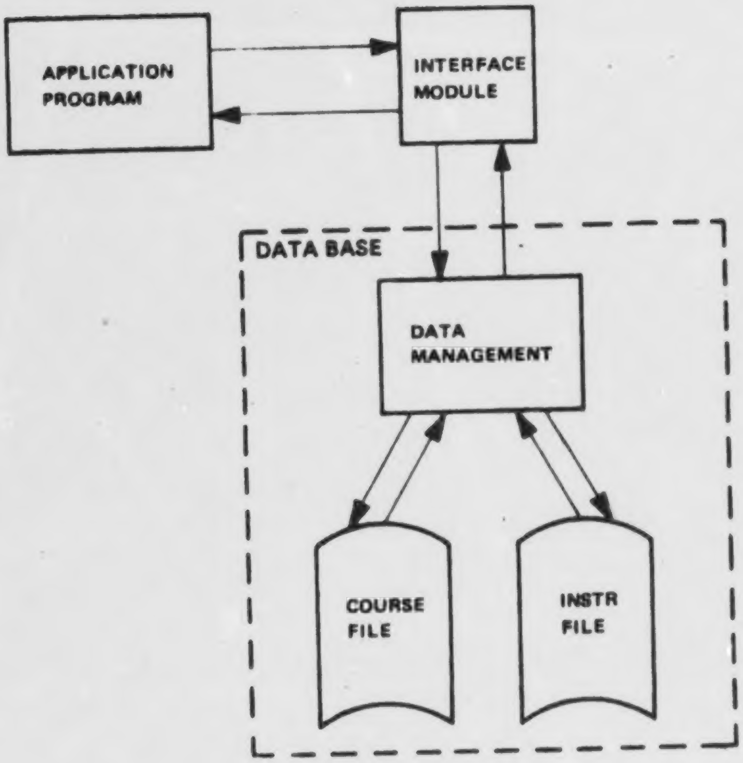

PCB     TYPE=DB,DBDNAME=INSTFILE,PROCOPT=L,KEYLEN=2
SENSEG INSTRUCT
PSBGEN LANG=PL/I,PSBNAME=INSTLOAD
END


PCB     TYPE=DB,DBDNAME=INSTFILE,PROCOPT=G,KEYLEN=2
SENSEG INSTRUCT
PSBGEN LANG=PL/I,PSBNAME=INSTDUMP
END

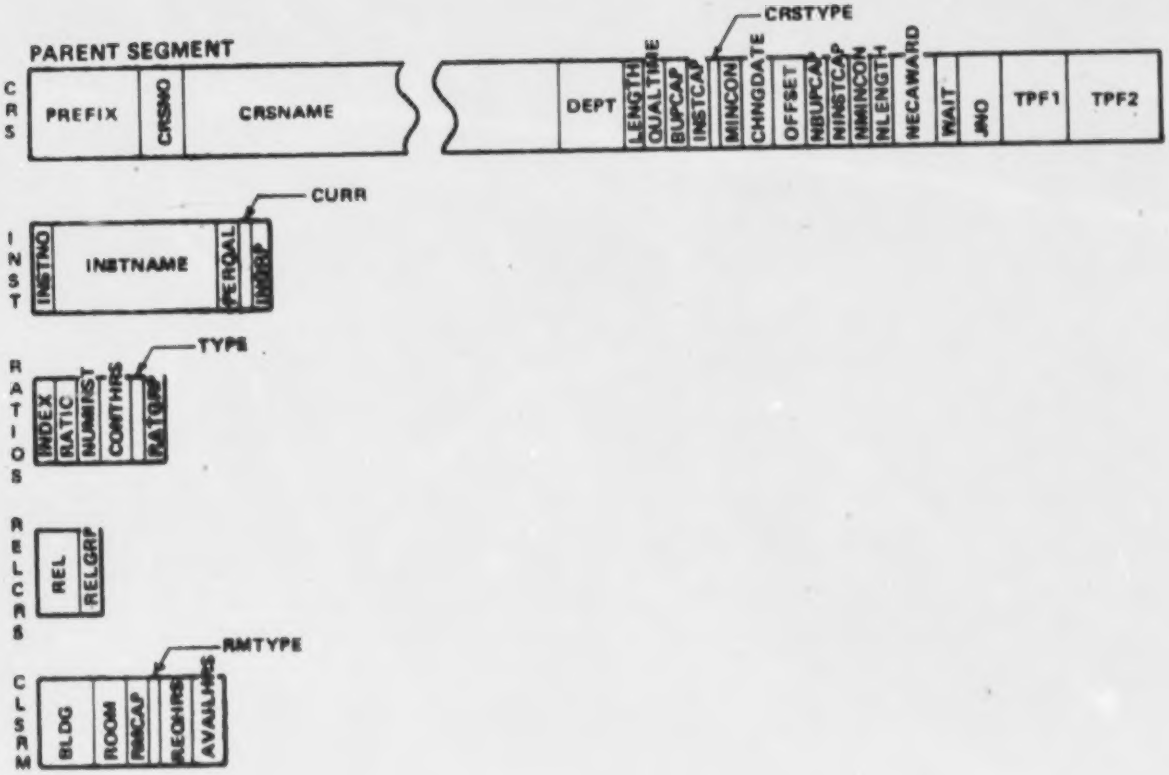

PCB     TYPE=DB,DBDNAME=INSTFILE,PROCOPT=A,KEYLEN=2
SENSEG INSTRUCT
PSBGEN LANG=PL/I,PSBNAME=INSTUPT
END


PCB     TYPE=DB,DBDNAME=CRSEFILE,PROCOPT=G,KEYLEN=12
SENSEG COURSE
SENSEG INST,COURSE
SENSEG RATIOS,COURSE
SENSEG RELCRS,COURSE
SENSEG CLSRM,COURSE
SENSEG STDATA,COURSE
SENSEG CMPLXGRP,COURSE
PCB     TYPE=DB,DBDNAME=INSTFILE,PROCOPT=G,KEYLEN=2
SENSEG INSTRUCT
PSBGEN LANG=PL/I,PSBNAME=INTRFACE
END
```

FIGURE V-3 PROGRAM SPECIFICATION BLOCKS FOR DATA BASE APPLICATION PROGRAMS.


APPLICATION PROGRAM
INTERFACE MODULE
DATA BASE
DATA MANAGEMENT
COURSE FILE
INSTR FILE

FIGURF V-4 APPLICATION PROGRAM AND DATA BASE MANAGEMENT SYSTEM INTERFACE



CRSTYPE
PARENT SEGMENT
CRS
PREFIX
CRSNO
CRSNAME
DEPT
LENGTH
QUALTIME
BUPCAP
INSTCAP
MINCON
CHNGDATE
OFFSET
NBUPCAP
NINSTCAP
NMINCON
NLENGTH
NECAWARD
WAIT
JNO
TPF1
TPF2
CURR
INST
INSTNO
INSTNAME
PERQAL
INGRP
TYPE
RATIOS
INDEX
RATIO
NUMINST
CONTHRS
RATGRP
RELCRS
REL
RELGRP
RMTYPE
CLSRM
BLDG
ROOM
RMCAP
REQHRS
AVAILHRS

FIGURE V-5 COURSE FILE STRUCTURE

SEGMENT	LEVEL	LENGTH	FREQUENCY	
COURSE	0	130	500	PARENT SEGMENT

FIELD	LENGTH	TYPE	FORMAT	
PREFIX	10	C		COURSE CATALOG NUMBER
*CRSNO	4	C		COURSE CDP NUMBER
CRSNAME	60	C		COURSE NAME
DEPT	6	C		DEPARTMENT
LENGTH	2	P	XX.X	LENGTH IN WEEKS
QUALTIME	2	P	XX.X	AVERAGE TIME (WEEKS TO QUALIFY INSTRUCTOR
BUPCAP	2	P	XXX	BUPERS COURSE QUOTA
INSTCAP	2	P	XXX	COURSE QUOTA
CRSTYPE	1	P	X	COURSE TYPE
MINCON	2	P	XXX	CURRENT NUMBER OF CONVENINGS
CHNGDATE	3	P	XXXXX	CHANGE DATE
OFFSET	3	P	XXXXX	OFFSET (WEEKS)
NBUPCAP	2	P	XXX	NEW BUBERS QUOTA
NINSTCAP	2	P	XXX	NEW COURSE QUOTA
NMINCON	2	P	XXX	NEW CURRENT CONVENINGS
NLENGTH	2	P	XX.X	NEW COURSE LENGTH
NECAWARD	4	C		COURSE NEC
WAIT	2	P	XXX	COURSE BACKLOG
JNO	4	C		COURSE J-NUMBER
TPF1 (1)	3	P	XXXXX	BUPERS DEMAND
TPF1 (2)	3	P	XXXXX	ANNUAL DEMAND
TPF2 (1)	3	P	XXXX.X	PERCENT FAIL
TPF2 (2)	3	P	XXXX.X	PERCENT NO SHOW
TPF2 (3)	3	P	XXXX.X	PERCENT NON-ACADEMIC DISENROLLMENT

SEGMENT	LEVEL	LENGTH	FREQUENCY	
INST	1	22	20	QUALIFIED INSTRUCTORS

FIELD	LENGTH	TYPE	FORMAT	
*INSTNO	2	P	XXX	ASSIGNED ID NO.
INSTNAME	15	C		INSTRUCTOR NAME
PERQUAL	2	P	XXX	% COURSE QUALIFIED FOR
CURR	1	C		CURRENTLY ASSIGNED FLAG
INGRP	2	P	XXX	GROUP

TABLE V-1 COURSE DATA FILE DESCRIPTION

SEGMENT	LEVEL	LENGTH	FREQUENCY	
RATIOS	1	12	4	STUDENT/INSTRUCTOR RATIOS

FIELD	LENGTH	TYPE	FORMAT	
*INDEX	2	P	XXX	ASSIGNED FOR TRACKING
RATIO	2	P	XX.X	STUDENT/INSTRUCTOR RATIO
NUMINST	2	P	XXX	NO. INSTRUCTORS AT THIS RATIO
CONTHRS	3	P	XXXX.X	CONTACT HOURS AT THIS RATIO
TYPE	1	P	X	LAB OR THEORY
RATGRP	2	P	XXX	GROUP

SEGMENT	LEVEL	LENGTH	FREQUENCY	
RELCRS	1	6	5	RELATED COURSES

FIELD	LENGTH	TYPE	FORMAT	
* REL	4	C		RELATED COURSE CDP NUMBER
RELGRP	2	C		GROUP

SEGMENT	LEVEL	LENGTH	FREQUENCY	
CLSRM	1	17	6	AVAILABLE CLASSROOMS

FIELD	LENGTH	TYPE	FORMAT	
* BLDG	5	C		BUILDING NUMBER
* ROOM	3	C		ROOM NUMBER
RMCAP	2	P	XXX	ROOM CAPACITY
RMTYPE	1	P	X	LAB, LECTURE, OR BOTH
REQHRS	3	P	XXXX.X	HRS. REQUIRED FOR THIS COURSE
AVAILHRS	3	P	XXXXX	HOURS AVAILABLE

* = Key field for segment

C = Character

P = Packed Decimal (length in bytes is less than number of digits due to packing)

TABLE V-1 CONTINUED

Figure V-6 illustrates the structure of the instructor file. This file is a simple hierarchical structure with non-repetitive data for each instructor. Table V-2 gives a comprehensive description of the file contents.

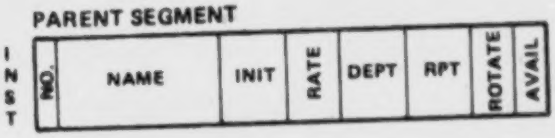


FIGURE V-6 INSTRUCTOR FILE STRUCTURE

SEGMENT	LEVEL	LENGTH	FREQUENCY	
INSTRUCTOR	0	43	500	PARENT SEGMENT

FIELD	LENGTH	TYPE	FORMAT	
* NUMBER	2	P	XXX	INSTRUCTOR NUMBER
NAME	15	C		INSTRUCTOR NAME
INITIALS	2	C		INSTRUCTOR INITIALS
RATE	5	C		RATE/RATING
DEPT	6	C		ASSIGNED DEPT
REPORT	6	C		REPORTING DATE
ROTATE	4	C		MO/YR ROTATION DATE
AVAIL	3	P	XXXXX	CONTACT HOURS AVAILABLE

TABEL V-2 INSTRUCTOR DATA FILE DESCRIPTION

OPERATING PROCEDURES

The use of cataloged procedures has minimized the amount of effor required to manipulate the data base. In most cases, only a few Job Control Language (JCL) cards are required to perform a particular function. A few general guidelines may be helpful:

a. A standard naming conversion is utilized for naming all data bases. This conversion consists of a prefix followed by the type of file. For example, the master data base consists of the files MASTER.CRSEFILE, MASTER.CRSEOVER, MASTER.INSTFILE, and MASTER.INSTOVER. The primary scratch data base for the SCRR model consists of SCRR.CRSFFILE, SCRR.CRSEOVER, etc. All cataloged procedures containing programs that access the data base have a parameter allowing the user to specify which data base to use. This parameter is the DB parameter. For example, to unload the master course file, the JCL card would read

```
"// LXEC CRSEDUMP,DB=MASTER"
```

b. A general purpose procedure, DLIBATCH, is used to call the data base maintenance programs. The DLIBATCH options are PSB, PROG, and DB. The DB option is explained above. The PROG parameter specifies the program name. The PSB parameter is used to select a Program Specification Block. Three PSB's are available for each file - one for load, one for update, and one for unload. The names are CRSELOAD, CRSEUPT, CRSEDUMP, INSTLOAD, INSTUPT, and INSTDUMP. A PSB may be used by more than one program (both the load and restore programs for each file use the LOAD PSB). For example, the DLIBATCH procedure is used to restore the scratch SCRR instructor file in preparation for a model run. The JCL card required to execute this action will read:

```
"// EXEC DLIBATCH, PROG=INSTREST,PSB=INSTLOAD,DB=SCRR"
```

INITIAL LOADING OF COURSE FILE. The JCL shown in Figure V-7 is used to load the course file portion of the data base. The input is comprised of course file load cards. The format for the course file load cards is depicted in Figure V-8. The same card format is used to update the course file. To initially load data into the course file, column 1/ of each card type must contain an "A", signifying "ADD". One each of card types CRA1, CRA2, and CRA3 must be included for each course to be loaded into the data base. The four remaining card types are optional.

a. RAA1 is used to provide student/instructor ratio data. A course may have different ratios for classroom instruction and for lab sessions.

b. REA1 is used to indicate a related course. A related course is one which utilizes the same instructor as the course being described.

c. RMA1 is used to identify classroom and laboratories used by the course.

d. INA1 is used to identify both the instructors who are currently teaching the course, and those who are not currently teaching but who are qualified to teach the course.

Any of the preceding four card types may be omitted if the data do not apply to the course being loaded; e.g., some courses may not require an REA1 card. Any number of each of the four optional card types may be included for each course; e.g., if a course has ten instructors currently teaching a course and an additional four instructors who are qualified but not teaching, a total of 14 INA1 cards should be entered for that course. The course file load cards may be loaded in any order. The CRSELOAD procedure sorts the input data after they are loaded.

Printed output includes an edit listing and a load listing. Each load card is printed accompanied by the status of the load or update operation.

```
//CRSELOAD JOB
//EDIT EXEC CRSEDIT
//EDIT.SYSIN DD *

 PLACE COURSE FILE LOAD CARDS HERE

/*
//LOAD EXEC CRSELOAD
```

FIGURE V-7 JCL TO LOAD COURSE FILE

UPDATE COURSE FILE. The JCL shown in Figure V-8 is required to update the course file portion of the data base. The user must specify the name of the data base containing the course file to be updated. To update the master data base course file, specify DB=MASTER on the second JCL card. To update the scratch SCRR data base, specify DB=SCRR. The input consists of the course file update cards.

```
//CRSEUPT JOB
// EXEC CRSEUPT,DB=MASTER     NOTE THAT THE DB PARM MAY CHANGE
//SORT.UPDATES DD *

 PLACE COURSE FILE UPDATE CARDS HERE

/*
```

FIGURE V-8 JCL TO UPDATE COURSE FILE

The course file update card format is identical to the load format (see Figure V-9). Individual courses may be added to an existing course file by following the course file load procedure. An "A" must be entered in column 17. Additional instructors, classrooms, or related courses may be added to courses previously loaded by using the appropriate card with an "A" in column 17; e.g., to add one instructor to a course already in the data base requires just one INA1 card. No CRA1, CRA2, or CRA3 cards are required. Additional update codes which may be placed in column 17 are:

a. "C" - used to change any of the data contained on a card type. Only the key field and the data to be changed need be entered on a "C" card. For example, to change a course length, a CRC2 card type is used with the course CDP number in columns 11-14 and the new course length in columns 25-27. All other fields may be left blank.

b. "R" - used to replace all data contained on a card type, excluding the key field. All data fields must be completed for replace operations. For example, the key field on the INR1 card is the instructor number. If instructor 157 is transferred from the training complex, he would be removed from both the course file and the instructor file. His replacement could then be assigned instructor number 157. The course file could be updated using the INR1 card for instructor 157, which contains the replacement instructor's name and other required data.

c. "D" - used to delete either an entire course or a single data segment from the course file. An entire course can be deleted by using a CRD1 card with the course CDP number entered in columns 11-14. To delete a course file segment, only the course CDP number, the appropriate card type with a "D" in column 17, and the segment key field need be entered on the card.

The course update cards may also be loaded in any order. The CRSEUPT procedure sorts the input data after they are loaded. The printed output from the CRSEUPT procedure is an edit listing which prints the update card and specifies whether the change was affected.

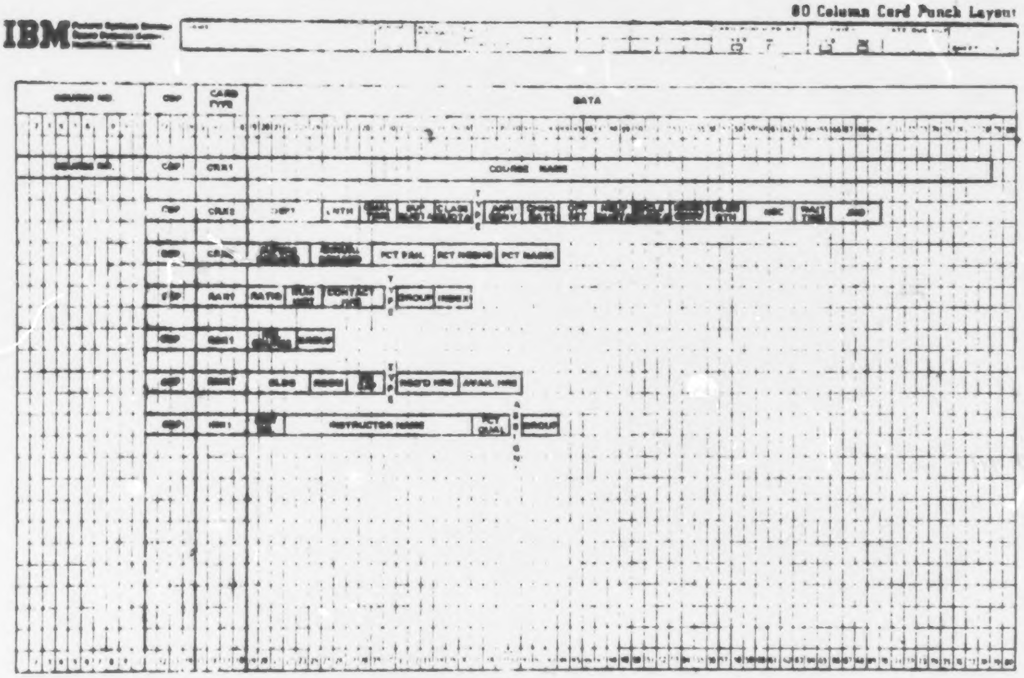

80 Column Card Punch Layout
IBM
CARD TYPE
DATA
CRS1
COURSE NAME
CRS2
DEPT
LNTH
PCT FAIL
RATIO
CONTACT HRS
GROUP
INDEX
AVAIL HRS
INSTRUCTOR NAME
PCT QUAL
GROUP

FIGURE V-9 COURSE FILE LOAD/UPDATE CARD FORMAT

UNLOAD THE COURSE FILE TO A SEQUENTIAL DATA SET. The JCL shown in Figure V-10 is used to unload the course file to a sequential data set.

```
//CRSEDUMP JOB
// EXEC CRSEDUMP,DB=MASTER    NOTE THAT THE DB PARM MAY CHANGE
```

FIGURE V-10 JCL TO UNLOAD COURSE FILE

The user must specify the name of the data base from which the course file is to be unloaded; e.g., DB-MASTER to unload the course file from the master data base. The CRSEDUMP procedure puts the unloaded course file on a temporary disk data set named "&&UNLOAD." If the user wishes to alter this procedure he must supply a "//DUMP.UNLOAD DD" override card. The CRSEDUMP procedure is used to create a new scratch data base from the master data base, and to unload the course file in the CRSELIST procedure.

The record layout for the unloaded course file is shown in Figure V-11.

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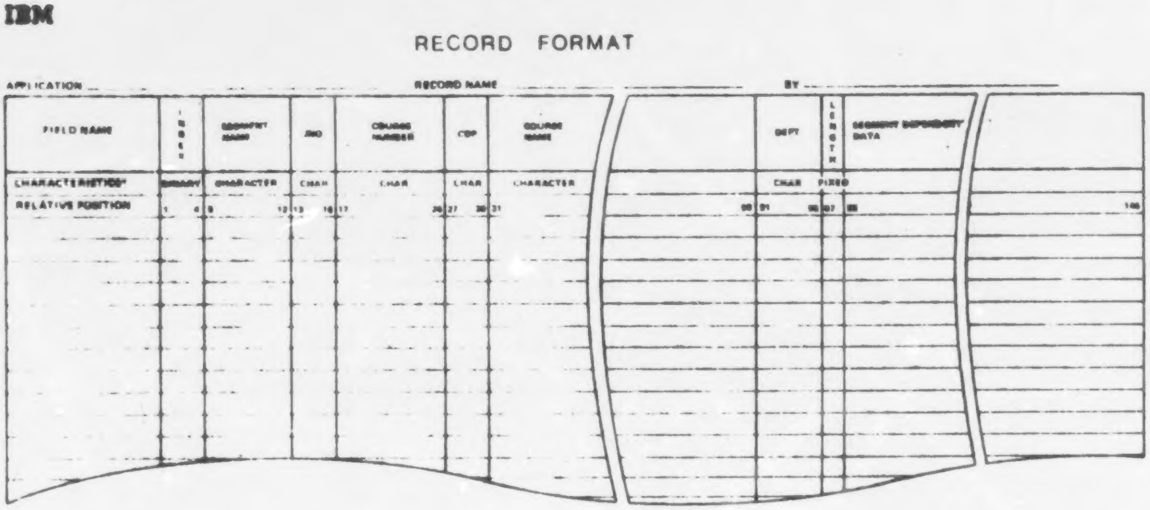

IBM

RECORD FORMAT

APPLICATION ______ RECORD NAME ______ BY ______

FIELD NAME	[illegible]	SEGMENT NAME	JNO	COURSE NUMBER	CDP	COURSE NAME		DEPT	LENGTH	SEGMENT DEPENDENT DATA	
CHARACTERISTICS	BINARY	CHARACTER	CHAR	CHAR	CHAR	CHARACTER		CHAR	FIXED		
RELATIVE POSITION	1 4	5 12	13 16	17 26	27 30	31	90	91 96	97	98	146

FIGURE V-11 UNLOADED COURSE FILE RECORD LAYOUT

CREATE DATA BASE COURSE FILE FROM SEQUENTIAL DATA SET. The JCL shown in Figure V-12 is used to create a data base course file from a sequential data set, formatted as shown in Figure V-11. The CRSEREST procedure is the reverse of the CRSEDUMP procedure. The user must specify the name of the data base which is to be loaded by the CRSEREST procedures.

```
//CRSEREST JOB
//RESTORE EXEC DLIBATCH,PROG=CRSEREST,PSB=CRSELOAD,DB=MASTER
```

FIGURE V-12 JCL TO CREATE COURSE FILE FROM SEQUENTIAL DATA SET

The user must also supply a "//GO.UNLOAD DD" override card to specify the data set name from which the course file is to be restored.

PRINT CONTENTS OF THE DATA BASE COURSE FILE. The JCL shown in Figure V-13 is used to print a listing of the contents of the data base course file. The user must specify the name of the data base from which the course file is to be listed. The listing may be sorted by the following keys:

a. DEPT - sort is by CDP within school. Default.

b. NUMBER - sort is by course number.

c. NAME - sort is by course name.

d. LENGTH - sort is by course length (weeks).

e. CDP - sort is by CDP.

f. USER - the user specifies on a second card, the unloaded course file record positions to be used as the sort key.

The desired sort key must be left justified on the sort key select card.

```
//CRSELIST JOB
// EXEC CRSEDUMP,DB-MASTER      NOTE THAT THE DB PARM MAY CHANGE
// EXEC CRSELIST
//PRINT.SYSIN DD *
 PLACE SORT KEY SELECT CARD HERE
/*
```

FIGURE V-13 JCL TO PRINT COURSE FILE

REORGANIZE DATA BASE. The JCL shown in Figure V-14 is used to reorganize the data base course file. The REORG job should be run each time an extensive update has been accomplished. The REORG job will conserve disk storage space and will reduce computer run time for any subsequent jobs which access the master DOTS data base.

```
//REORG JOB
// EXEC CRSEDUMP,DB-MASTER      NOTE THAT THE DB PARM MAY CHANGE
// EXEC DLIBATCH,PROG=CRSEREST,PSB-CRSELOAD,DB-MASTER
//GO.UNLOAD DD DSN=&&UNLOAD, DISP=(OLD,DELETE)
```

FIGURE V-14 JCL TO REORGANIZE COURSE FILE

INITIAL LOADING OF INSTRUCTOR FILE. The JCL presented in Figure V-15 is used to load the instructor file portion of the data base. The input consists of the instructor file load cards. The format for the instructor file load cards is depicted in Figure V-16. The same card format is used to update the instructor file. To initially load data into the instructor file, column 1 must contain an "A". The instructor load cards may be entered in any order. The INSTLOAD procedure sorts the input data after it is loaded. Printed output includes an edit listing and a load listing. Each load card is printed accompanied by the status of the load operation.

```
//INSTLOAD JOB
// EXEC INSTLOAD
//LOAD.SYSIN DD *

 PLACE INSTRUCTOR FILE LOAD CARDS HERE

/*
```

FIGURE V-15 JCL TO LOAD INSTRUCTOR FILE

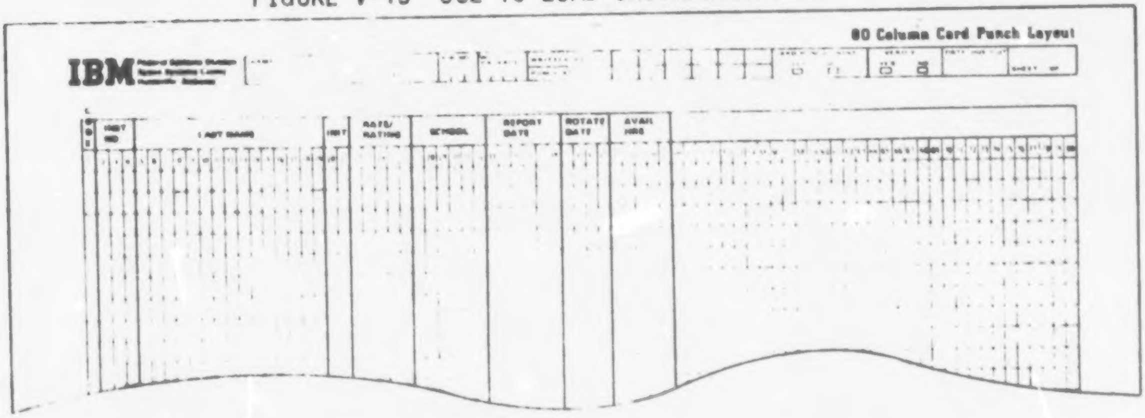

FIGURE V-16 INSTRUCTOR FILE LOAD/UPDATE CARD FORMAT

UPDATE INSTRUCTOR FILE. The JCL to update the instructor file is shown in Figure V-17.

```
//INSTUPT JOB
//UPDATE EXEC DLIBATCH,PROG=INSTUPT,PSB=INSTUPT,DB-MASTER
//GO.UPDATES DD *

 PLACE INSTRUCTOR FILE UPDATE CARDS HERE

/*
```

FIGURE V-17 JCL TO UPDATE INSTRUCTOR FILE

The user must specify the name of the data base containing the instructor file to be updated. To update the master DOTS data base instructor file, specify DB=MASTER. To update the scratch SCRR data base instructor file, specify DB=SCRR. The instructor file update card format is identical to the load card format (see Figure V-16). The update option codes to be entered in column 1 include:

a. "A" - used to add an instructor to an existing instructor file.

b. "C" - used to change any of the data contained in the update card format. Only the instructor number and the data to be charged need be entered on a "C" card. All remaining fields may be left blank. For example, to change the instructor availability, a "C" should be entered in column 1, the instructor number whose availability is to be changed in columns 2-4, and the new number of hours available in columns 43-47.

c. "R" - used to replace all data for the specified instructor number. The instructor number, which is the instructor file key field, may not be replaced.

d. "D" - used to delete an instructor from the instructor file. Only a "D" in column 1 and the instructor number in columns 2-4 need be entered on a "D" card.

The instructor update cards may be entered in any order. The INSTUPT procedure sorts the input data after it is loaded. The printed output includes an edit listing which prints the update card and notes the status of the update.

UNLOAD INSTRUCTOR FILE TO A SEQUENTIAL DATA SET. The JCL shown in Figure V-18 is used to unload the instructor file to a sequential data set.

```
//INSTDUMP JOB
// EXEC DLIBATCH,PROG=INSTDUMP,PSB=INSTDUMP,DB=MASTER
```

FIGURE V-18 JCL TO UNLOAD INSTRUCTOR FILE

The user must specify the name of the data base from which the instructor file is to be unloaded; e.g., DB=MASTER to unload the instructor file from the master DOTS data base. The user must also specify a "//GO.UNLOAD DD" data set name in which to place the unloaded instructor file. The INSTDUMP procedure is used to create a new scratch SCRR data base instructor file from the master DOTS data base, and is used to unload the instructor file in the INSTLIST procedure.

CREATE DATA BASE INSTRUCTOR FILE FROM SEQUENTIAL DATA SET. The JCL shown in Figure V-19 is used to create a data base instructor file from the sequential data set formatted by the INSTDUMP procedure. The INSTREST procedure is the reverse of the INSTDUMP procedure. The user must specify the name of the data base which is to be loaded by the INSTREST procedure. The user must also define the "//GO.UNLOAD DD" data set from which the instructor file is to be restored.

```
//INSTREST JOB
//RESTORE EXEC DLIBATCH,PROG=INSTREST,PSB=INSTLOAD,DB=MASTER
```

FIGURE V-19 JCL TO CREATE INSTRUCTOR FILE FROM SEQUENTIAL DATA SET

PRINT THE CONTENTS OF THE DATA BASE INSTRUCTOR FILE. The JCL shown in Figure V-20 is used to print a listing of the contents of the data base instructor file.

```
//INSTLIST JOB
// EXEC INSTLIST
//LIST.SYSIN DD *
 PLACE SORT KEY CONTROL CARD HERE
/*
```

FIGURE V-20 JCL TO PRINT INSTRUCTOR FILE

The output listing may be sorted by any one of the following keys:

a. NUMBER - sort is by instructor number.

b. RATE - sort is by rate.

c. REPORT - sort is by report date.

d. ROTATE - sort is by rotate date.

e. NAME - sort is by instructor name. Default.

The desired sort key must be left justified on the sort key control card.

CATALOGED PROCEDURES. The cataloged procedures associated with the operating procedure JCL are presented in Figure V-21.

```
MEMBER NAME   CRSEDIT
//DEFAULT PROC PR=TEST,VOL=NAVY01
//EDIT      EXEC PGM=CRSEDIT
//STEPLIB   DD  DSN=&PR..LINKLIB,DISP=SHR
//SYSPRINT  DD  SYSOUT=A
//CHECK     DD  DSN=&&CHECK,UNIT=SYSDA,SPACE=(800,(250,100),RLSE),
//              DCB=(LRECL=80,BLKSIZE=800,RECFM=FB),DISP=(NEW,PASS)
//SF1       DD  DSN=NAVY.COPFILE,UNIT=SYSDA,VOL=SER=&VOL,
//              DCB=(RKP=0,KEYLEN=4,BLKSIZE=8,DSORG=IS),DISP=SHR
//SF2       DD  DSN=NAVY.JNOFILE,UNIT=SYSDA,VOL=SER=&VOL,
//              DCB=(RKP=C,KEYLEN=4,BLKSIZE=8,DSORG=IS),DISP=SHR
//SORT      EXEC PGM=IERRC000,PARM='MSG=AP',COND=(0,NE,EDIT)
//SORTIN    DD  DSN=&&CHECK,DISP=(OLD,DELETE)
//SYSOUT    DD  SYSOUT=A
//SORTOUT   DD  DSN=&&GOSET,UNIT=SYSDA,SPACE=(800,(250,100),RLSE),
//              DCB=(LRECL=80,BLKSIZE=800,RECFM=FB),DISP=(NEW,PASS)
//SORTLIB   DD  DSN=SYS1.SORTLIB,DISP=SHR
//SORTWK01  DD  UNIT=SYSDA,SPACE=(CYL,5,,CONTIG)
//SORTWK02  DD  UNIT=SYSDA,SPACE=(CYL,5,,CONTIG),SEP=SORTWK01
//SORTWK03  DD  UNIT=SYSDA,SPACE=(CYL,5,,CONTIG),SEP=(SORTWK01,SORTWK02)
//SYSIN     DD  DSN=NAVY.SORTCTL(CRSEDIT),DISP=SHR
```

```
MEMBER NAME   CRSEDIT
 SORT FIELDS=(11,4,CH,A,15,4,CH,A),SIZE=E2500
 RECORD TYPE=F,LENGTH=(80)
```

```
MEMBER NAME   CRSELOAD
//DEFAULT PROC DB=MASTER,VOL=NAVY01
//LOAD      EXEC PGM=DFSIRC00,PARM='3,CRSELOAD,CRSELOAD'
//STEPLIB   DD  DSN=DLI.RESLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR
//SYSPRINT  DD  SYSOUT=A
//CRSEDATA  DD  DSN=&DB..CRSEFILE,UNIT=SYSDA,VOL=SER=&VOL,
//              DCB=DSORG=IS,DISP=OLD
//CRSEOVER  DD  DSN=&DB..CRSEOVER,UNIT=SYSDA,VOL=SER=&VOL,DISP=OLD
//DLI       DD  DSN=DLI.DBDLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR
//          DD  DSN=DLI.PSBLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR
//SYSIN     DD  DSN=&&GOSET,DISP=(OLD,DELETE)
```

```
MEMBER NAME   CRSEUPT
//DEFAULT PROC DB=MASTER,VOL=NAVY01
//SORT      EXEC PGM=IERRC000,PARM='MSG=AP'
//SYSOUT    DD  SYSOUT=A
//SORTIN    DD  DDNAME=UPDATES
//SORTLIB   DD  DSN=SYS1.SORTLIB,DISP=SHR
//SORTOUT   DD  DSN=&&GOSET,UNIT=SYSDA,SPACE=(800,(25,10),RLSE),
//              DCB=(LRECL=80,BLKSIZE=800,RECFM=FB),DISP=(,PASS)
//SORTWK01  DD  UNIT=SYSDA,SPACE=(CYL,1,,CONTIG)
//SORTWK02  DD  UNIT=SYSDA,SPACE=(CYL,1,,CONTIG),SEP=SORTWK01
//SORTWK03  DD  UNIT=SYSDA,SPACE=(CYL,1,,CONTIG),SEP=(SORTWK01,SORTWK02)
//SYSIN     DD  DSN=NAVY.SORTCTL(CRSEUPT),DISP=SHR
//UPDATE    EXEC PGM=DFSIRC00,PARM='3,CRSEUPT,CRSEUPT'
//STEPLIB   DD  DSN=DLI.RESLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR
//SYSPRINT  DD  SYSOUT=A
//CRSEDATA  DD  DSN=&DB..CRSEFILE,UNIT=SYSDA,VOL=SER=&VOL,
//              DCB=DSORG=IS,DISP=(OLD,KEEP)
//CRSEOVER  DD  DSN=&DB..CRSEOVER,UNIT=SYSDA,VOL=SER=&VOL,DISP=OLD
//DLI       DD  DSN=DLI.DBDLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR
//          DD  DSN=DLI.PSBLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR
//SYSIN     DD  DSN=&&GOSET,DISP=(OLD,DELETE)
```

```
MEMBER NAME   CRSEUPT
 SORT FIELDS=(17,1,CH,D,15,2,CH,A,11,4,CH,A,18,1,CH,A),SIZE=E100
 RECORD TYPE=F,LENGTH=(80)
```

FIGURE V-21 DATA BASE CATALOGED PROCEDURES

```
MEMBER NAME   SELECT
//DEFAULT PROC PR=TEST                                                  00000010
//SELECT  EXEC PGM=SELECT                                               00000020
//STEPLIB  DD  DSN=&PR..LINKLIB,DISP=SHR                                00000030
//SORTLIB  DD  DSN=SYS1.SORTLIB,DISP=SHR                                00000040
//SYSOUT   DD  SYSOUT=A                                                 00000050
//SYSPRINT DD SYSOUT=A                                                  00000060
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,1,,CONTIG)                         00000070
//SORTWK02 DD  UNIT=SYSDA,SPACE=(CYL,1,,CONTIG),SEP=SORTWK01            00000080
//SORTWK03 DD  UNIT=SYSDA,SPACE=(CYL,1,,CONTIG),SEP=(SORTWK01,SORTWK02) 00000090
//SORTOUT  DD  DSN=&&GOSET,UNIT=SYSDA,SPACE=(CYL,(1,1)),                00000100
//             DCB=(RECFM=VBS,BLKSIZE=3520,LRECL=160),DISP=(,PASS)      00000110
//INFILE   DD  DSN=&&UNLOAD,DISP=(OLD,DELETE)                           00000120
//SYSIN    DD  DUMMY                                                    00000130
```

```
MEMBER NAME   CRSEDUMP
//DEFAULT PROC DB=MASTER,VOL=NAVY01                                     00000010
//DUMP     EXEC PGM=DFSIRC00,PARM='1,CRSEDUMP,CRSEDUMP'                 00000020
//STEPLIB  DD  DSN=DL1.RESLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR          00000030
//SYSPRINT DD  SYSOUT=A                                                 00000040
//CRSEDATA DD  DSN=&DB..CRSEFILE,UNIT=SYSDA,VOL=SER=&VOL,               00000050
//             DCB=DSORG=IS,DISP=OLD                                    00000060
//CRSEOVER DD  DSN=&DB..CRSEOVER,UNIT=SYSDA,VOL=SER=&VOL,DISP=OLD       00000070
//DL1      DD  DSN=DL1.DBDLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR          00000080
//         DD  DSN=DL1.PSBLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR          00000090
//UNLOAD   DD  DSN=&&UNLOAD,UNIT=SYSDA,                                 00000100
//             SPACE=(CYL,(2,1),RLSE),DISP=(,PASS)                      00000110
//SYSIN    DD  DUMMY                                                    00000120
```

```
MEMBER NAME  CRSELIST
//DEFAULT PROC SYSOUT=A,PR=TEST                                         00000010
//PRINT   EXEC PGM=CRSELST                                              00000020
//STEPLIB  DD  DSN=&PR..LINKLIB,DISP=SHR                                00000030
//SORTLIB  DD  DSN=SYS1.SORTLIB,DISP=SHR                                00000040
//SYSPRINT DD  SYSOUT=&SYSOUT                                           00000050
//SORTWK01 DD  SPACE=(CYL,5,,CONTIG),UNIT=SYSDA                         00000060
//SORTWK02 DD  SPACE=(CYL,5,,CONTIG),UNIT=SYSDA,SEP=SORTWK01            00000070
//SORTWK03 DD  SPACE=(CYL,5,,CONTIG),UNIT=SYSDA,SEP=(SORTWK01,SORTWK02) 00000080
//SORTIN   DD  DSN=&&UNLOAD,DISP=(OLD,PASS)                             00000090
//SYSOUT   DD  DUMMY                                                    00000100
//SYSIN    DD  DUMMY                                                    00000110
```

```
MEMBER NAME   DLIBATCH
//DEFAULT PROC PROG=,PSB=,VOL=NAVY01,DB=MASTER                          00000010
//*        DL/I BATCH EXECUTOR                                          00000020
//GO       EXEC PGM=DFSIRC00,PARM='1,&PROG,&PSB'                        00000030
//STEPLIB  DD DSN=DL1.RESLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=OLD           00000040
//SYSPRINT DD  SYSOUT=A                                                 00000050
//SYSUDUMP DD  SYSOUT=A                                                 00000060
//CRSEDATA DD  DSN=&DB..CRSEFILE,UNIT=SYSDA,VOL=SER=&VOL,               00000070
//             DCB=DSORG=IS,DISP=OLD                                    00000080
//INSTDATA DD  DSN=&DB..INSTFILE,UNIT=SYSDA,VOL=SER=&VOL,               00000090
//             DCB=DSORG=IS,DISP=OLD                                    00000100
//CRSEOVER DD  DSN=&DB..CRSEOVER,UNIT=SYSDA,VOL=SER=&VOL,DISP=OLD       00000110
//INSTOVER DD  DSN=&DB..INSTOVER,UNIT=SYSDA,VOL=SER=&VOL,DISP=OLD       00000120
//DL1      DD  DSN=DL1.DBDLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR          00000130
//         DD  DSN=DL1.PSBLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR          00000140
```

FIGURE V-21 (CONTINUED)

```
MEMBER NAME  PSBGEN
//DEFAULT PROC MBR=TEMPNAME,VOL=NAVY01
//ASM      EXEC PGM=IEUASM,PARM='LOAD,NODECK'
//SYSPRINT DD  SYSOUT=A
//SYSLIB   DD  DSN=SYS1.MACLIB,DISP=SHR
//         DD  DSN=DLI.GENLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR
//SYSGO    DD  DSN=&&LOADSET,UNIT=SYSDA,DISP=(,PASS),
//             SPACE=(400,(50,25),RLSE),DCB=(BLKSIZE=400,
//             LRECL=80,RECFM=FB)
//SYSUT1   DD  SPACE=(CYL,(1,1)),UNIT=SYSDA
//SYSUT2   DD  SPACE=(CYL,(1,1)),UNIT=SYSDA,SEP=SYSUT1
//SYSUT3   DD  SPACE=(CYL,(1,1)),UNIT=SYSDA,SEP=(SYSUT1,SYSUT2)
//LKED     EXEC PGM=DFSILNK0,PARM='LIST,XREF,MAP',COND=(0,NE,ASM)
//STEPLIB  DD  DSN=DLI.RESLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR
//SYSPRINT DD  SYSOUT=A
//SYSLMOD  DD  DSN=DLI.PSBLIB(&MBR),UNIT=SYSDA,VOL=SER=&VOL,DISP=OLD
//SYSUT1   DD  SPACE=(CYL,(1,1)),UNIT=SYSDA
//SYSLIN   DD  DSN=&&LOADSET,DISP=(OLD,DELETE)
//         DD  DDNAME=SYSIN
```

```
MEMBER NAME  DBDGEN
//DEFAULT PROC MBR=TEMPNAME,VOL=NAVY01
//ASM      EXEC PGM=IEUASM,PARM='LOAD,NODECK'
//SYSPRINT DD  SYSOUT=A
//SYSLIB   DD  DSN=SYS1.MACLIB,DISP=SHR
//         DD  DSN=DLI.GENLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR
//SYSGO    DD  DSN=&&LOADSET,UNIT=SYSDA,DISP=(,PASS),
//             SPACE=(400,(50,25),RLSE),DCB=(BLKSIZE=400,
//             LRECL=80,RECFM=FB)
//SYSUT1   DD  SPACE=(CYL,(1,1)),UNIT=SYSDA
//SYSUT2   DD  SPACE=(CYL,(1,1)),UNIT=SYSDA,SEP=SYSUT1
//SYSUT3   DD  SPACE=(CYL,(1,1)),UNIT=SYSDA,SEP=(SYSUT1,SYSUT2)
//LKED     EXEC PGM=DFSILNK0,PARM='LIST,XREF,MAP',COND=(0,NE,ASM)
//STEPLIB  DD  DSN=DLI.RESLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR
//SYSPRINT DD  SYSOUT=A
//SYSLMOD  DD  DSN=DLI.DBDLIB(&MBR),UNIT=SYSDA,VOL=SER=&VOL,DISP=OLD
//SYSUT1   DD  SPACE=(CYL,(1,1)),UNIT=SYSDA
//SYSLIN   DD  DSN=&&LOADSET,DISP=(OLD,DELETE)
//         DD  DDNAME=SYSIN
```

```
MEMBER NAME  PLICNTRL
         INCLUDE SYSLIB(DFSLI000)
         ENTRY   IHESAPD
```

FIGURE V-21 (CONTINUED)

```
MEMBER NAME   DLIPLI
//DEFAULT PROC MBR=,LIB1='NAVY.SRCLIB',VL1=NAVY01,                  00000010
//             VOL=NAVY01,PR=TEST,LEVEL=F,CND=4                      00000020
//*       PL/I DL/I COMPILE AND LINKEDIT                             00000030
//PL1L     EXEC PGM=IEMAA,PARM='X,A,M,LD,ND,NT,NS2,OPT=1,FLAG&LEVEL' 00000040
//SYSPRINT DD  SYSOUT=A                                              00000050
//SYSLIB   DD  DSN=&LIB1,VOL=SER=&VL1,UNIT=SYSDA,DISP=SHR            00000060
//SYSLIN   DD  DSN=&&LOADSET,UNIT=SYSDA,DISP=(MOD,PASS),             00000070
//             SPACE=(400,(50,25),RLSE),DCB=(BLKSIZE=400,            00000080
//             LRECL=80,RECFM=FB)                                    00000090
//SYSUT1   DD  SPACE=(CYL,(2,1)),UNIT=SYSDA                          00000100
//SYSUT3   DD  SPACE=(CYL,(2,1)),UNIT=SYSDA                          00000110
//LKED     EXEC PGM=DFSILNK0,COND=(&CND,LT,PL1L),                    00000120
//             PARM='LIST,LET,XREF,MAP'                              00000130
//STEPLIB  DD  DSN=DL1.RESLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR       00000140
//SYSPRINT DD  SYSOUT=A                                              00000150
//SYSLMOD  DD  DSN=&PR..LINKLIB(&MBR),DISP=OLD                       00000160
//SYSLIB   DD  DSN=SYS1.PL1LIB,DISP=SHR                              00000170
//         DD  DSN=DL1.RESLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR       00000180
//SYSUT1   DD  SPACE=(CYL,(1,1)),UNIT=SYSDA                          00000190
//SYSLIN   DD  DSN=&&LOADSET,DISP=(OLD,DELETE)                       00000200
//         DD  DSN=NAVY.SORTCTL(PL1CNTRL),DISP=SHR                   00000210
//         DD  DDNAME=SYSIN                                          00000220
```

```
MEMBER NAME   INSTLOAD
//DEFAULT PROC VOL=NAVY01,DB=MASTER                                  00000010
//LOAD     EXEC PGM=DFSIRC00,PARM='3,INSTLOAD,INSTLOAD'              00000020
//STEPLIB  DD  DSN=DL1.RESLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR       00000030
//SORTLIB  DD  DSN=SYS1.SORTLIB,DISP=SHR                             00000040
//SYSPRINT DD  SYSOUT=A                                              00000050
//SYSOUT   DD  SYSOUT=A                                              00000060
//SORTIN   DD  DDNAME=SYSIN                                          00000070
//SORTWK01 DD  SPACE=(CYL,1,,CONTIG),UNIT=SYSDA                      00000080
//SORTWK02 DD  SPACE=(CYL,1,,CONTIG),UNIT=SYSDA,SEP=SORTWK01         00000090
//SORTWK03 DD  SPACE=(CYL,1,,CONTIG),UNIT=SYSDA,SEP=(SORTWK01,SORTWK02) 00000100
//INSTDATA DD  DSN=&DB..INSTFILE,UNIT=SYSDA,VOL=SER=&VOL,            00000110
//             DCB=DSORG=IS,DISP=OLD                                 00000120
//INSTOVER DD  DSN=&DB..INSTOVER,UNIT=SYSDA,VOL=SER=&VOL,DISP=OLD    00000130
//DL1      DD  DSN=DL1.DBDLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR       00000140
//         DD  DSN=DL1.PSBLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR       00000150
```

```
MEMBER NAME   INSTLIST
//DEFAULT PROC VOL=NAVY01,DB=MASTER                                  00000010
//LIST     EXEC PGM=DFSIRC00,PARM='3,INSTLIST,INSTDUMP'              00000020
//STEPLIB  DD  DSN=DL1.RESLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR       00000030
//SORTLIB  DD  DSN=SYS1.SORTLIB,DISP=SHR                             00000040
//SYSPRINT DD  SYSOUT=A                                              00000050
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,1,,CONTIG)                      00000060
//SORTWK02 DD  UNIT=SYSDA,SPACE=(CYL,1,,CONTIG),SEP=SORTWK01         00000070
//SORTWK03 DD  UNIT=SYSDA,SPACE=(CYL,1,,CONTIG),SEP=(SORTWK01,SORTWK02) 00000080
//INSTDATA DD  DSN=&DB..INSTFILE,UNIT=SYSDA,VOL=SER=&VOL,            00000090
//             DCB=DSORG=IS,DISP=SHR                                 00000100
//INSTOVER DD  DSN=&DB..INSTOVER,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR    00000110
//SYSOUT   DD  SYSOUT=A                                              00000120
//DL1      DD  DSN=DL1.DBDLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR       00000130
//         DD  DSN=DL1.PSBLIB,UNIT=SYSDA,VOL=SER=&VOL,DISP=SHR       00000140
```

FIGURE V-21 (CONTINUED)

DATA BASE CONTENTS (SAMPLE LISTING)

```
09/26/74            DOTS SUPPORT UTILITY---COURSE FILE LISTING                PAGE  34

7002********************COURSE NUMBER=J-100-C7C0----CDP=5699************************
------------------------COURSE  NAME------------------------  DEPT    NEC    TYPE
ELECTRONIC TEST EQUIPMENT                                      E T            LOCK

                      ---------CURRENT-----------------------------FUTURE----------
 QUAL       BACK       CONV   LEN     QUOTAS     CHNG OFF     QUOTAS     LEN   CONV
 TIME       LOG       PER YR  WKS  BUPRS  CLASS DATE SET BUPRS  CLASS    WKS  PER YR
8.0 WKS    20 WKS        12   2.0    0      10    0    0    0       0    0.0      0

    TPF FIELDS: BUPERS    ANNUAL    PCT     PCT      PCT
                DEMAND    DEMAND    FAIL   NOSHOW   NONACDIS
                  0        121      0.0    21.0       0.2

INDEX   RATIO   #INSTRS   HOURS   TYPE   GROUP
  1      5.0      2       40.0    LAB      1
  2     10.0      1       20.0   THEORY    1

    RELATED COURSES: CDP   GROUP
                     511V    1

    INSTRUCTORS:   NUMBER   NAME                  %QUAL   ASSIGNED?   GROUP
                    249     DELS                   100      NO          1
                    253     JOHNSON                100      YES         1
                    254     FOLSOM                 100      NO          1
                    255     SANDERS                100      YES         1

    CLASSROOMS:   BUILDING   ROOM   CAPACITY   TYPE   REQUIRED   AVAILABLE
                   V-25A     150       10      BOTH     60.0       2080

7192********************COURSE NUMBER=A-102-0083----CDP=766A************************
------------------------COURSE  NAME------------------------  DEPT    NEC    TYPE
AN/SPN-38 LORAN C RECEIVING SET MAINTENANCE                    E T            LOCK

                      ---------CURRENT-----------------------------FUTURE----------
 QUAL       BACK       CONV   LEN     QUOTAS     CHNG OFF     QUOTAS     LEN   CONV
 TIME       LOG       PER YR  WKS  BUPRS  CLASS DATE SET BUPRS  CLASS    WKS  PER YR
20.0 WKS    0 WKS         4   5.0    2       4    0    0    0       0    0.0      0

    TPF FIELDS: BUPERS    ANNUAL    PCT     PCT      PCT
                DEMAND    DEMAND    FAIL   NOSHOW   NONACDIS
                  8          2      0.0     0.0       0.0

INDEX   RATIO   #INSTRS   HOURS   TYPE   GROUP
  1      2.0      1      100.0    LAB      2
  2      2.0      1      100.0    LAB      1
  3      4.0      1       50.0   THEORY    1

    RELATED COURSES: CDP   GROUP
                     369C    2
                     774A    2

    INSTRUCTORS:   NUMBER   NAME                  %QUAL   ASSIGNED?   GROUP
                    243     LICKLY                 100      YES         2
                    247     BEALS                  100      YES         1

    CLASSROOMS:   BUILDING   ROOM   CAPACITY   TYPE   REQUIRED   AVAILABLE
                   N-25A     127        4      BOTH    150.0       2080
```

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```
                                                                                   PAGE    1
09/26/74           DOTS SUPPORT UTILITY---INSTRUCTOR FILE LISTING
INSTRUCTOR NO.       INSTRUCTOR NAME          RATE      DEPT     REPORT    ROTATE    AVAIL

      65           BEHR              J L      MM1       AC & R   030971    0974      1000
      96           BURKE             J        MMC       AC & R   161070    1274      1000
      64           DUCKIEWICZ        J        MMCS      AC & R   020771    1074      1000
      68           GARDNER           L        MMC       AC & R   110272    0275      1000
      72           GORDON            L        ETC       AC & R   021073    1077      1000
      67           HAWORTH                    PMC       AC & R   031271    1274      1000
      73           HICKS                      BTC       AC & R   130871    0275      1000
      75           MAY                        BTC       AC & R   300672    0675      1000
      70           SCULL             J L      MM1       AC & R   210973    0976      1000
      66           SMITH               J      MMC       AC & R   100971    1074      1000
      74           STOE[illegible]AY          HT1       AC & R   011071    1074      1000
      71           THOMPSON                   MM1       AC & R   211273    1276      1000
      63           WILSON                     MML       AC & R   120873    0976      1000
      76           WOSNIAK           J        HT1       AC & R   131072    1075      1000
     128           ATWOOD            W L      TMC       ASW      120371    0974      1000
     136           BROOKS            R T      STI       ASW      260973    1175      1000
     131           BROWN             L        TM1       ASW      210973    0877      1000
     129           COLBURN                    TM1       ASW      200473    0476      1000
       3           HUNT                L      STCS      ASW      171072    0576      1000
     133           JOYCE             J P      EW1       ASW      240372    0375      1000
      21           EBERLE            J E      AWC       ASW      190573    0576      1000
      40           PAUL              L F      STC       ASW      240473    0476      1000
     135           STEPHENS                   GMGC      ASW      211273    0177      1000
     134           STEWART           L W      OS1       ASW      280772    0675      1000
     132           STREIT            W        LWC       ASW      120572    0875      1000
      41           [illegible]       W        STI       ASW      230471    1174      1000
      22           WAGNER              R      AW1       ASW      090773    0876      1000
     130           WILSON            L P      TM1       ASW      020273    0476      1000
     115           AKERSON           L F      LT        COMM     151272    0175      1000
     259           BERNARD           J L      RM1       COMM     041073    1076      1000
     126           BOURNST[illegible]         RMC       COMM     040274    0177      1000
     257           BOUNDS            W G      RM1       COMM     051073    0576      1000
     265           BUIE              L M      RMCM      COMM     080972    0376      1000
     260           BERNARD                    RMC       COMM     141272    0676      1000
     113           ESKRIDGE          W        RM1       COMM     060474    0577      1000
     124           FREDERICK         W M      LTJG      COMM     100773    0776      1000
     262           HILL              J A      RMC       COMM     171172    0676      1000
     153           MORLOCK                    RM1       COMM     130574    0875      1000
     261           SNADER            L U      RM1       COMM     120973    1076      1000
     150           SPAITS              I      RM1       COMM     060773    1075      1000
     256           TENNANT                    RMC       COMM     190572    0176      1000
      77           BLEICHER          I J      LT        D C      040474    0477      1000
      83           COOPER            W F      MT1       D C      190371    1074      1000
      87           FORD              R D      SM1       D C      071273    1074      1000
      77           FREEMAN           L F      FN1       D C      271072    1075      1000
      80           GAYDOS                     MTC       D C      270773    0776      1000
      86           HAZLETT                    MTC       D C      020471    0974      1000
      84           MAYNARD           I        ENC       D C      060373    0576      1000
      82           MEAD              L E      MTC       D C      170973              1000
     118           PFANNENSTILL      L        OS1       D C      061173    1176      1000
      78           TUMILTY           T        EM1       D C      090672    0975      1000
      81           WAKEFIELD         L        MT1       D C      100571    1274      1000
     251           ALLEN                      ETC       E T      060270    0874      1000
     206           BACON                      LTC       E T      180573    0977      1000
     252           BALLENTINE        J        LTC       E T      040272    0976      1000
     231           BARKER            P D      ETE       E T      170971    0975      1000
```

DOTS DATA BASE PROGRAM LISTINGS AND FLOW CHARTS.

The DOTS data base program listings and flow charts are presented on the following pages.

```
           /* COURSE FILE LOAD - PRE SORT EDITOR */                                       PAGE

STMT LEVEL NEST
                         /* COURSE FILE LOAD - PRE SORT EDITOR */
  1              EDIT:   PROCEDURE OPTIONS(MAIN);
  2     1                DECLARE
                           CARD CHARACTER(80),
                           P POINTER,
                           (N,RC) FIXED BIN(31) INIT(0),
                           G(1:9) LABEL,
                           IHESARC ENTRY(FIXED BIN(31)) RETURNS(FIXED BIN(31)),
                           (COPTJN,JNTCOP) ENTRY(CHAR(4)) RETURNS(CHAR(4)),
                           SYSIN FILE RECORD SEQUENTIAL INPUT,
                           CHECK FILE RECORD SEQUENTIAL OUTPUT,
                           (SF1,SF2) FILE RECORD DIRECT INPUT ENVIRONMENT(INDEXED),
                           TSTCHAR CHARACTER(48) INIT(
               'CRA1****CRA2****CRA3****INA1****RAA1****REA1****RMA1****STA1****XPA1'
                           ),
                           1 PRE,
                             2 PREFIX CHARACTER(10),
                             2 NUMBER CHARACTER(4),
                             2 TYPE CHARACTER(4),
                           1 POST1 CHARACTER(60),
                           1 POST2,
                             2 DEPT CHARACTER(6),
                             2 F1(12) FIXED BIN(31),
                             2 REC CHAR(4),
                             2 F2 FIXED BIN(31),
                           1 POST3(5) FIXED BIN(31),
                           1 POST4,
                             2 NO FIXED BIN(31),
                             2 NAME CHARACTER(15),
                             2 PERQUAL FIXED BIN(31),
                             2 SW BIT(1) ALIGNED,
                             2 RATGAP FIXED BIN(31),
                           1 POST5(9) FIXED BIN(31),
                           1 POST6,
                             2 RM CHAR(4),
                             2 F FIXED BIN(31),
                           1 POST7,
                             2 ROOM CHARACTER(8),
                             2 F(4) FIXED BIN(31),
                           1 POST8(2) FIXED BIN(31),
                           1 POST9(2) FIXED BIN(31),
                           1 INREC STATIC,
                             2 FIRST CHAR(4),
                             2 SECOND CHAR(4),
                           1 OVLY BASED(P),
                             2 PR CHARACTER(34),
                             2 TYP CHARACTER(4);

  3     1        COPTJN: PROCEDURE(IN) RETURNS(CHAR(4));
  4     2                DECLARE IN CHAR(4);
  5     2                READ FILE(SF1) INTO(INREC) KEY(IN);
  6     2                RETURN(SECOND);
  7     2                END COPTJN;

  8     1        JNTCOP: PROCEDURE(IN) RETURNS(CHAR(4));
  9     2                DECLARE IN CHAR(4);
```

```
                 /* COURSE FILE LOAD - PRE SORT EDITOR */

STMT LEVEL NEST

 10    2                    READ FILE(SF2) INTO(INREC) KEY(INT);
 11    2                    RETURN(SECOND);
 12    2                    END JNTCOP;

 13    1                    ON KEY(SF1) BEGIN; /* UNFOUND COP */
 15    2                       PUT FILE(SYSPRINT) EDIT('<---INVALID COP')(A);
 16    2                       GO TO START;
 17    2                       END;

 18    1                    ON KEY(SF2) BEGIN; /* UNFOUND J NUMBER */
 20    2                       PUT FILE(SYSPRINT) SKIP EDIT('<---INVALID J NUMBER')(A);
 21    2                       GO TO START;
 22    2                       END;
 23    1                    ON CONVERSION BEGIN;
 25    2                       PUT FILE(SYSPRINT) EDIT('<---INVALID NUMERIC FIELD')(A);
 26    2                       RC=8;
 27    2                       GO TO START;
 28    2                       END;
 29    1                    ON ENDFILE(SYSIN) GO TO EOJ;
 31    1                    OPEN FILE(SYSIN),FILE(SYSPRINT),FILE(CHECK);
 32    1                    P=ADDR(CARD);

 33    1          START:    READ FILE(SYSIN) INTO(CARD);
 34    1                    PUT FILE(SYSPRINT) SKIP EDIT(CARD)(A);
 35    1                    N=INDEX(STCHAR,TYP);
 36    1                    IF N=0 | MOD(N-1,8)¬=0 THEN DO;
 38    1      1                PUT FILE(SYSPRINT) EDIT('<---INVALID CARD TYPE')(A);
 39    1      1                RC=8;
 40    1      1                GO TO START;
 41    1      1                END;
 42    1                    GO TO G(FLOOR(N/8)+1);
 43    1          G(1):     GET STRING(CARD) EDIT(PRE,POST1)(R(CRA1)); GO TO PUNCH;
 45    1          G(2):     GET STRING(CARD) EDIT(PRE,POST2)(R(CRA2));
 46    1                    IF SUBSTR(CARD,80,1)¬=' ' THEN SUBSTR(CARD,66,4)=NUMBER;
 48    1                       ELSE SUBSTR(CARD,66,4)=COPY,JNTCOP(NUMBER);
 49    1                    GO TO PUNCH;
 51    1          G(3):     GET STRING(CARD) EDIT(PRE,POST3)(R(CRA3)); GO TO PUNCH;
 52    1          G(4):     GET STRING(CARD) EDIT(PRE,POST4)(R(INSRA)); GO TO PUNCH;
 54    1          G(5):     GET STRING(CARD) EDIT(PRE,POST5)(R(RAA5)); GO TO PUNCH;
 56    1          G(6):     GET STRING(CARD) EDIT(PRE,POST6)(R(RECA6)); GO TO PUNCH;
 58    1          G(7):     GET STRING(CARD) EDIT(PRE,POST7)(R(RRRA)); GO TO PUNCH;
 60    1          G(8):     GET STRING(CARD) EDIT(PRE,POST8)(R(STA8)); GO TO PUNCH;
 62    1          G(9):     GET STRING(CARD) EDIT(PRE,POST9)(R(CEPA));
 63    1          PUNCH:    IF SUBSTR(CARD,80,1)¬=' ' THEN
 64    1                       SUBSTR(CARD,11,4)=JNTCOP(NUMBER);
 65    1                    SUBSTR(CARD,80,1)=' ';
 66    1                    WRITE FILE(CHECK) FROM(CARD);
 67    1                    GO TO START;

 68    1          EOJ:      CALL IHESARC(RC);
 69    1                    RETURN;

 70    1          CRA1:     FORMAT(A(10),A(4),A(4),A(60));
 71    1          CRA2:     FORMAT(A(10),A(4),A(4),A(4),(4)F(3),F(3),
                                   F(2)(3),A(4),F(3));
```

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```
                    /* COURSE FILE LOAD - PRE SORT EDITOR */                              PAGE

STMT LEVEL NEST

 72      1              CRA3:     FORMAT(A(10),A(4),A(4),(5)F(5));
 73      1              INA1:     FORMAT(A(10),A(4),A(4),F(3),A(15),F(3),B(1),F(3));
 74      1              RAA1:     FORMAT(A(10),A(4),A(4),(2)F(3),F(5),F(1),F(3));
 75      1              REA1:     FORMAT(A(10),A(4),A(4),A(4),F(3));
 76      1              RMA1:     FORMAT(A(10),A(4),A(4),A(8),F(3),F(1),(2)F(5));
 77      1              STA1:     FORMAT(A(10),A(4),A(4),F(3),F(5));
 78      1              XPA1:     FORMAT(A(10),A(4),A(4),F(3),F(5));

 79      1                        END EDIT;
```

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CHART TITLE - PROCEDURE EDIT OPTIONS (MAIN)

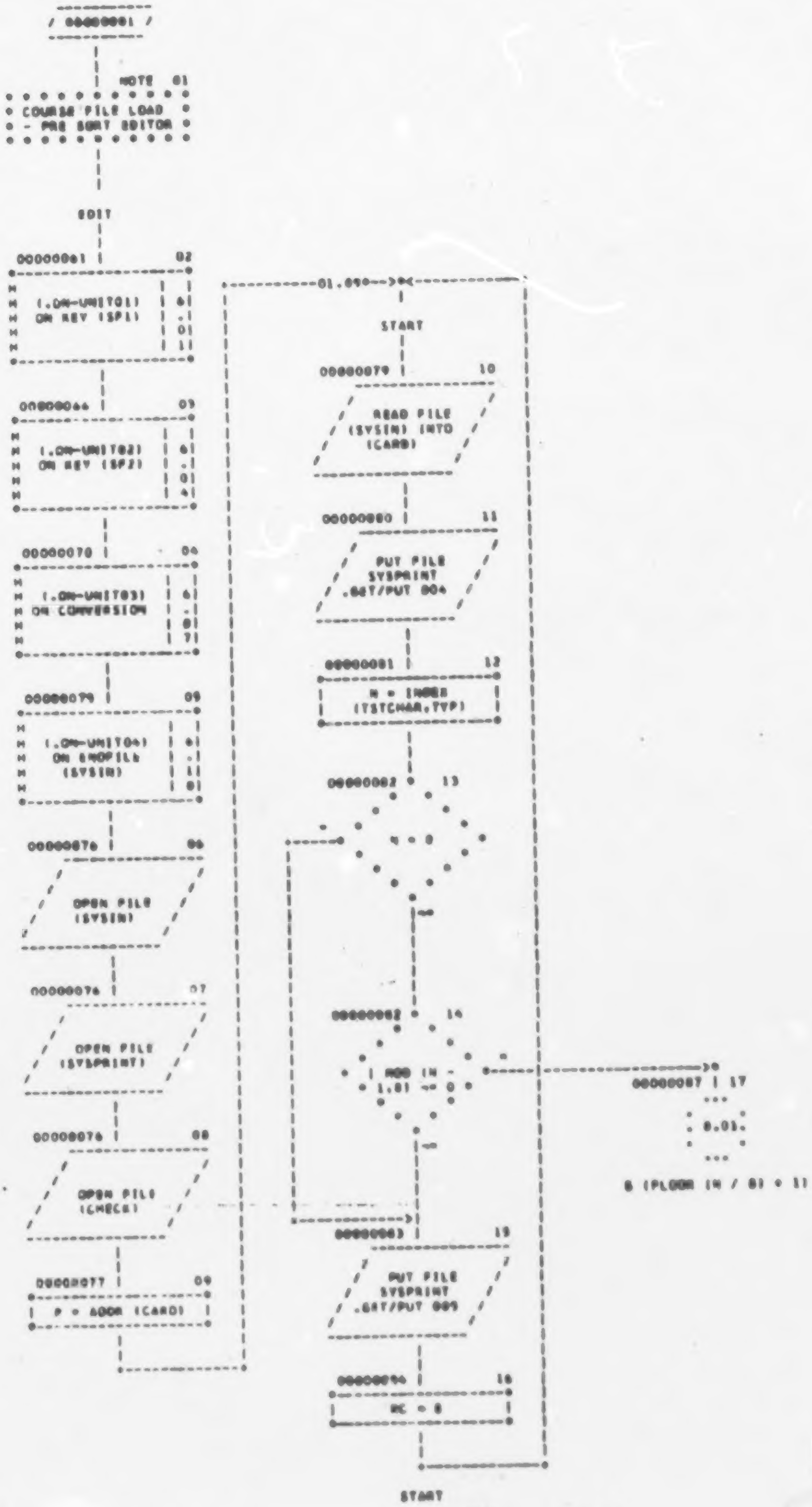
/ 00000001 /
NOTE 01
COURSE FILE LOAD - PRE SORT EDITOR
EDIT
00000061 02
(.ON-UNIT01) ON KEY (SP1)
6.01
00000066 03
(.ON-UNIT02) ON KEY (SP2)
6.04
00000070 04
(.ON-UNIT03) ON CONVERSION
6.07
00000079 05
(.ON-UNIT04) ON ENDFILE (SYSIN)
6.10
00000076 06
OPEN FILE (SYSIN)
00000076 07
OPEN FILE (SYSPRINT)
00000076 08
OPEN FILE (CHECK)
00000077 09
P = ADDR (CARD)
01.090
START
00000079 10
READ FILE (SYSIN) INTO (CARD)
00000080 11
PUT FILE SYSPRINT .GET/PUT 004
00000081 12
N = INDEX (TSTCHAR,TYP)
00000082 13
N = 0
00000082 14
MOD (N - 1,8) ¬= 0
00000087 17
8.01
B (FLOOR (N / 8) + 1)
00000083 15
PUT FILE SYSPRINT .GET/PUT 005
00000096 16
RC = 8
START

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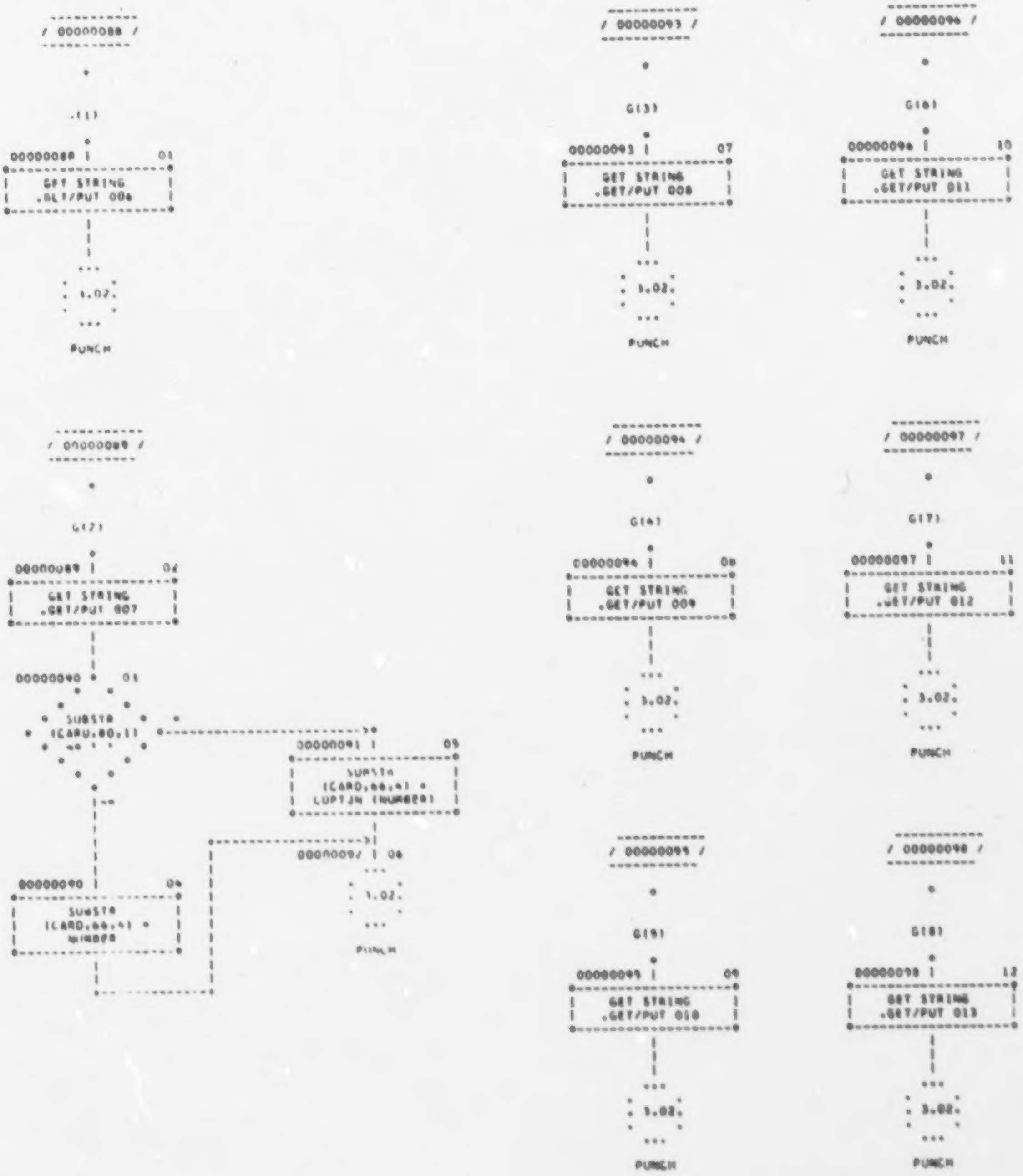
CHART TITLE - PROCEDURE EDIT OPTIONS (MAIN)


/ 00000088 /
G(1)
00000088 01
GET STRING .GET/PUT 006
3.02.
PUNCH
/ 00000089 /
G(2)
00000089 02
GET STRING .GET/PUT 007
00000090 03
SUBSTR (CARD,80,1)
NO
00000091 05
SUBSTR (CARD,66,4) = LOPTJN (NUMBER)
00000092 06
3.02.
PUNCH
00000090 04
SUBSTR (CARD,66,4) = NUMBER
/ 00000093 /
G(3)
00000093 07
GET STRING .GET/PUT 008
3.02.
PUNCH
/ 00000096 /
G(6)
00000096 10
GET STRING .GET/PUT 011
3.02.
PUNCH
/ 00000094 /
G(4)
00000094 08
GET STRING .GET/PUT 009
3.02.
PUNCH
/ 00000097 /
G(7)
00000097 11
GET STRING .GET/PUT 012
3.02.
PUNCH
/ 00000095 /
G(5)
00000095 09
GET STRING .GET/PUT 010
3.02.
PUNCH
/ 00000098 /
G(8)
00000098 12
GET STRING .GET/PUT 013
3.02.
PUNCH

AUTOFLOW CHART SET -

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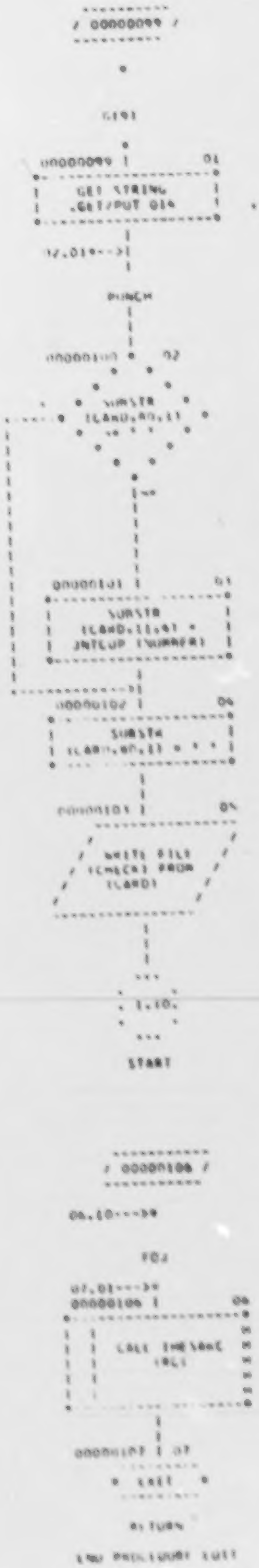
CHART TITLE - PROCEDURE EDIT OPTIONS (MAIN)


/ 00000099 /
GIO1
00000099 01
GET STRING
.GET/PUT 014
02,014-->
PUNCH
00000100 02
SUBSTR
(CARD,80,1)
= ' '
NO
00000101 03
SUBSTR
(CARD,11,4) =
INTCUP (NUMBER)
00000102 04
SUBSTR
(CARD,80,1) = ' '
00000103 05
WRITE FILE
(CHECK) FROM
(CARD)
1.10.
START
/ 00000106 /
06,10--->
EOJ
07,01--->
00000106 06
CALL IHESAAC
(RC)
00000107 07
EXIT
RETURN
END PROCEDURE EDIT

```
09/11/74                                AUTOFLOW CHART SET -                                PAGE 04

CHART TITLE - PROCEDURE COPTJN (IN) RETURNS (CHAR (4))


                                          ----------
                                        / 00000049 /
                                        ----------

                                             *

                                          COPTJN

                                             *
                                    00000051 I          01
                                         ----------------
                                        /               /
                                       /READ FILE (SFIL)/
                                      / INTO (INREC)   /
                                     /   KEY (IN)     /
                                    /               /
                                    ----------------
                                             I
                                             I
                                    00000052 I 02
                                         ---------
                                         *  EXIT  *
                                         ---------

                                      RETURN (SECOND)

                                    END PROCEDURE COPTJN
```

```
                                                  AUTOFLOW CHART SET -                                      PAGE 09
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CHART TITLE - PROCEDURE JNTCOP (INT RETURNS (CHAR (4)))


                                              -----------
                                             / 00000055 /
                                             -----------

                                                   *


                                                 JNTCOP

                                                   *
                                       00000057 I          01
                                             ------------------
                                            /                 /
                                           /READ FILE (SF2)  /
                                          / INTO (INREC)    /
                                         /   KEY (INT)     /
                                        /                 /
                                       ------------------
                                                  I
                                                  I
                                        00000058 I 02
                                              ---------
                                             *  EXIT   *
                                              ---------

                                          RETURN (SECOND)

                                        END PROCEDURE JNTCOP
```

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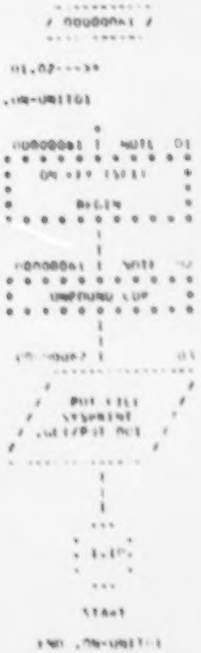
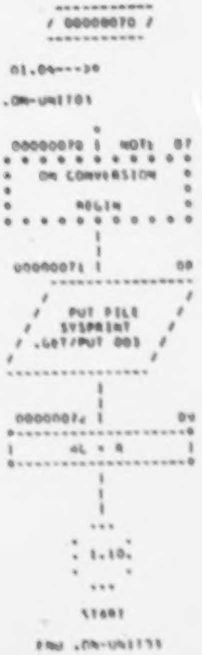
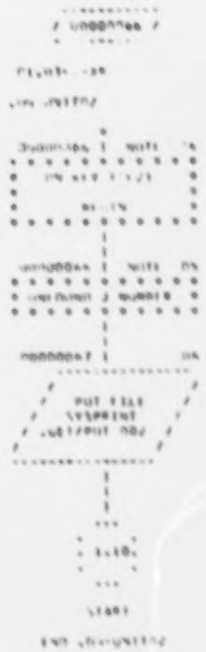
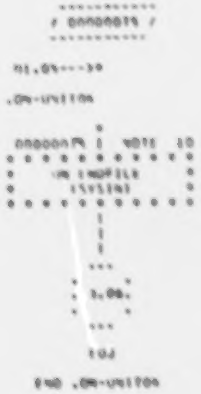
CHART TITLE: ON-UNIT ACTION BLOCKS


NOTE 01
BEGIN
PUT FILE
SYSPRINT
START
END .ON-UNIT01


/ 00000070 /
01.04--->*
.ON-UNIT01
00000070
NOTE 07
ON CONVERSION
BEGIN
00000071
08
PUT FILE
SYSPRINT
.GET/PUT 003
00000072
09
1.10.
START
END .ON-UNIT01


NOTE
BEGIN
PUT FILE
SYSPRINT
.GET/PUT 002
1.10.
START


/ 00000075 /
01.05--->*
.ON-UNIT06
NOTE 10
ON ENDFILE
(SYSIN)
1.08.
EOJ
END .ON-UNIT06

```
                                                                      PAGE
              /* COURSE FILE LOAD - FILE BUILD ROUTINE */

              SOURCE LISTING.

STMT LEVEL NEST              /* COURSE FILE LOAD - FILE BUILD ROUTINE */
  1           DLITPLI: PROCEDURE(CRSEPCB) OPTIONS(MAIN);

                             /***************/
                             /* COURSE PCB */
                             /***************/

                             DECLARE 1 CRSEPCB,
  2     1                              2 DBNAME CHAR(8),
                                       2 LEVFD CHAR(2),
                                       2 STATCD CHAR(2),
                                       2 PROCOPT CHAR(4),
                                       2 JCBADDR POINTER,
                                       2 SEGFD CHAR(8),
                                       2 KEYLEN FIXED BIN(31),
                                       2 NOSS FIXED BIN(31),
                                       2 KEYFD CHAR(12),
                                       2 SN1 CHAR(8),
                                       2 SN2 CHAR(8),
                                       2 SN3 CHAR(8),
                                       2 SN4 CHAR(8),
                                       2 SN5 CHAR(8),
                                       2 SN6 CHAR(8),
                                       2 SN7 CHAR(8);

                              /*********************************************/
                              /* THIS SET OF DECLARATIONS DESCRIBES EACH */
                              /* OF THE SEGMENTS IN THE COURSE DATA BASE */
                              /*********************************************/

                              DECLARE
  3     1                        1 COURSE,
                                   2 PREFIX CHAR(10),
                                   2 CRSNO CHAR(4),
                                   2 CRSNAME CHAR(60),
                                   2 DEPT CHAR(6),
                                   2 LENGTH FIXED DEC(3,1),
                                   2 QUALTIME FIXED DEC(3,1),
                                   2 BUPCAP FIXED DEC(3,0),
                                   2 INSTCAP FIXED DEC(3,0),
                                   2 CRSTYPE FIXED DEC(1,0),
                                   2 MINCON FIXED DEC(3,0),
                                   2 CHNGDATE FIXED DEC(5,0),
                                   2 OFFSET FIXED DEC(5,0),
                                   2 NBUPCAP FIXED DEC(3,0),
                                   2 NINSTCAP FIXED DEC(3,0),
                                   2 NMINCON FIXED DEC(3,0),
                                   2 NLENGTH FIXED DEC(3,1),
                                   2 NECAWARD CHAR(4),
                                   2 WAIT FIXED DEC(3,0),
                                   2 JNO CHAR(4),
                                   2 TPF1(2) FIXED DEC(5,0),
```

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```
STMT LEVEL NEST
                                2 TPF2(3) FIXED DEC(5,1),
                              1 INST,
                                2 INSTNO FIXED DEC(3,0),
                                2 INSTNAME CHAR(15),
                                2 PERQUAL FIXED DEC(3,0),
                                2 CURR BIT(1) ALIGNED,
                                2 INGRP FIXED DEC(3,0),
                              1 RATIOS,
                                2 INDEX FIXED DEC(3,0),
                                2 RATIO FIXED DEC(3,1),
                                2 NUMINST FIXED DEC(3,0),
                                2 CONTHRS FIXED DEC(5,1),
                                2 TYPE FIXED DEC(1,0),
                                2 RATGRP FIXED DEC(3,0),
                              1 RELCRS,
                                2 REL CHAR(4),
                                2 RELGRP CHAR(2),
                              1 CLSRM,
                                2 BLDG CHAR(5),
                                2 ROOM CHAR(3),
                                2 RMCAP FIXED DEC(3,0),
                                2 RMTYPE FIXED DEC(1,0),
                                2 REQHRS FIXED DEC(5,1),
                                2 AVAILHRS FIXED DEC(5,0),
                              1 STDATA,
                                2 TYPE FIXED DEC(3,0),
                                2 FACTOR FIXED DEC(3,0),
                              1 CMPLXGRP,
                                2 TYPE FIXED DEC(3,0),
                                2 FACTOR FIXED DEC(3,0);

                          /************************/
                          /* COURSE SEGMENT SSA */
                          /************************/

    4    1                DECLARE
                              1 SSA1 STATIC,
                                2 SEGMENT CHAR(8) INIT('COURSE  '),
                                2 LP CHAR(1) INIT('('),
                                2 FIELD CHAR(8) INIT('CRSNO   '),
                                2 RO CHAR(2) INIT(' ='),
                                2 KEY CHAR(4),
                                2 RP CHAR(1) INIT(')'),
                              1 SSA2 STATIC,
                                 2 SEGMENT CHAR(8),
                                 2 LP CHAR(1) INIT('('),
                                 2 FIELD CHAR(8),
                                 2 RO CHAR(2) INIT(' ='),
                                 2 KEY CHAR(8),
                                 2 RP CHAR(1) INIT(')');

                           /*********************/
                           /* FUNCTION CODES */
                           /*********************/
```

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```
                                                                                                  PAGE
          /* COURSE FILE LOAD - FILE BUILD ROUTINE */

 STMT LEVEL NEST                                                                          308
   4    1              DECLARE (GET_UNIQUE        CHAR(4) INIT('GU  '),                  309
                                GET_NEXT          CHAR(4) INIT('GN  '),                  310
                                GET_NEXT_WP       CHAR(4) INIT('GNP '),                  311
                                GET_HOLD_UNIQUE   CHAR(4) INIT('GHU '),                  312
                                GET_HOLD_NEXT     CHAR(4) INIT('GHN '),                  313
                                GET_HOLD_NEXT_WP  CHAR(4) INIT('GHNP'),                  314
                                INSERT            CHAR(4) INIT('ISRT'),                  315
                                DELETE            CHAR(4) INIT('DLET'),                  316
                                REPLACE           CHAR(4) INIT('REPL'),                  317
                                THREE  FIXED BINARY(31) INIT(3),                         318
                                FOUR   FIXED BINARY(31) INIT(4),                         319
                                FIVE   FIXED BINARY(31) INIT(5)) STATIC;                   7
   6    1              DECLARE                                                             8
                          SYSIN FILE RECORD SEQUENTIAL INPUT,                              9
                          (SWAP,STPFLG) BIT(1) ALIGNED INIT('0'B),                        10
                          TOTAL FIXED BIN(31) STATIC INIT(0),                             11
                          (I,J,MAX) FIXED BIN(31),                                        12
                          (CARD,CA(1:2500)) CHAR(80),                                     13
                          LOCK CHAR(6),                                                   14
                          1 OVLY1 BASED(P),                                               15
                            2 PR CHAR(10),                                                16
                            2 OWNO CHAR(4),                                               17
                            2 TYP CHAR(6),                                                18
                          OVLY2 CHAR(240) BASED(Q);                                       19
                                                                                          20
   7    1       SWITCH:  PROCEDURE;                                                       21
   8    2                DECLARE TEMP CHAR(80);                                           22
   9    2                TEMP=CA(J);                                                      23
  10    2                CA(J)=CA(J+1);                                                   24
  11    2                CA(J+1)=TEMP;                                                    25
  12    2                SWAP='1'B;                                                       26
  13    2                RETURN;                                                          27
  14    2                END SWITCH;                                                      28
                                                                                          29
  15    1                ON CONDITION(DLIERR) PUT FILE(SYSPRINT) EDIT                     30
                            ('<---DATA BASE ERROR - ERR CODE=',STATCD)(A);                31
  17    1                ON ENDFILE(SYSIN) BEGIN;                                         32
  19    2                   STPFLG='1'B; TYP='CRA1';                                      33
  21    2                   END;                                                          34
  22    1                ON ERROR SNAP BEGIN;                                             35
  24    2                   PUT FILE(SYSPRINT) PAGE EDIT                                  36
                               ('PROGRAM FAILURE - TERMINAL VALUES ARE:',                 37
                               'CARD=',CARD,'LOCK=',LOCK,'TYPE=',TYP)                     38
                               (A,SKIP,A,A,SKIP,A,A,X(5),A,A);                            39
  25    2                   STOP;                                                         40
  26    2                   END;                                                          41
  27    1                 P=ADDR(CARD);                                                   42
  28    1                 Q=ADDR(CA);                                                     43
  29    1                 READ FILE(SYSIN) INTO(CARD);                                    44
                                                                                          45
  30    1       START:    DO WHILE(TYP¬='CRA1');                                          46
  31    1    1               READ FILE(SYSIN) INTO(CARD);                                 47
  32    1    1               END;                                                         48
  33    1                  IF STPFLG THEN DO;                                             49
  35    1    1                PUT FILE(SYSPRINT) PAGE EDIT(TOTAL,' RECORDS LOADED')
```

```
                    /* COURSE FILE LOAD - FILE BUILD ROUTINE */                                  PAGE

STMT LEVEL NEST
                                                                   (F(5),A);                      50
                                                                                                  51
                                 RETURN;                                                          52
 36     1    1                   END;                                                             53
 37     1    1                CA(1)=CARD;                                                         54
 38     1                     LOCK=OWND;                                                          55
 39     1                     READ FILE(SYSIN) INTO(CARD);                                        56
 40     1                     IF TYP¬='CRA2' | OWND¬=LOCK THEN GO TO START;                       57
 41     1                     CA(2)=CARD;                                                         58
 43     1                     READ FILE(SYSIN) INTO(CARD);                                        59
 44     1                     IF TYP¬='CRA3' | OWND¬=LOCK THEN GO TO START;                       60
 45     1                     CA(3)=CARD;                                                         61
 47     1                     GET STRING(ONLY7/) EDIT(COURSE)(A(10),A(4),A(4),A(60),A(20),        62
 48     1                          A(6),(2)F(3,1),(2)F(3),F(3),(6)F(3),F(3,1),                   63
                                   A(6),F(3),A(6),A(20),(2)F(5),(3)F(5,1));                      64
                              PUT FILE(SYSPRINT) SKIP(2) EDIT(CA(1),CA(2),CA(3))(A,SKIP);         65
 49     1                     CALL PLITDLI(FOUR,INSERT,CRSEPCB,COURSE,'COURSE  ');                66
 50     1                     IF STATCD¬='  ' THEN DO;                                            67
 51     1                        SIGNAL CONDITION(DLIERR);                                        68
 53     1    1                   GO TO START;                                                     69
 54     1    1                   END;                                                             70
 55     1    1                TOTAL=TOTAL+1;                                                      71
 56     1                     READ FILE(SYSIN) INTO(CARD);                                        72
 57     1                     SSA1.KEY=LOCK;                                                      73
 58     1                     IF TYP='INA1' THEN DO;                                              74
 59     1                        DO I=1 BY 1 WHILE(TYP='INA1');                                   75
 61     1    1                      IF OWND¬=LOCK THEN GO TO START;                               76
 62     1    2                      CA(I)=CARD;                                                   77
 64     1    2                      READ FILE(SYSIN) INTO(CARD);                                  78
 65     1    2                      END;                                                          79
 66     1    2                   I=I-1; MAX=I; SWAP='1'B;                                         80
 67     1    1                   DO WHILE(SWAP);                                                  81
 70     1    1                      SWAP='0'B; MAX=MAX-1;                                         82
 71     1    2                      DO J=1 BY 1 TO MAX;                                           83
 73     1    2                         IF SUBSTR(CA(J),19,3)>SUBSTR(CA(J+1),19,3) THEN            84
 74     1    3                            CALL SWITCH;                                            85
 75     1    3                         END;                                                       86
 76     1    3                      END;                                                          87
 77     1    2                   DO J=1 BY 1 TO I;                                                88
 78     1    1                      PUT FILE(SYSPRINT) SKIP EDIT(CA(J))(A);                       89
 79     1    2                      GET STRING(CA(J)) EDIT(INST)(X(18),F(3),                      90
 80     1    2                           A(15),F(3),B(1),F(3));                                   91
                                    CALL PLITDLI(FIVE,INSERT,CRSEPCB,INST,SSA1,'INST     ');      92
 81     1    2                      IF STATCD¬='  ' THEN SIGNAL CONDITION(DLIERR);                93
 82     1    2                      ELSE TOTAL=TOTAL+1;                                           94
 84     1    2                      END;                                                          95
 85     1    2                   END;                                                             96
 86     1    1                DO I=1 BY 1 WHILE(TYP='RAA1');                                      97
 87     1                        IF OWND¬=LOCK THEN GO TO START;                                  98
 88     1    1                   PUT FILE(SYSPRINT) SKIP EDIT(CARD)(A);                           99
 90     1    1                   GET STRING(CARD) EDIT(RATIO,NUMINST,CONTHRS,RATIOS.TYPE,        100
 91     1    1                        RATGRP)(X(18),F(3,1),F(3),F(5,1),F(1),F(3));               101
                                 INDEX=I;                                                        102
 92     1    1                   CALL PLITDLI(FIVE,INSERT,CRSEPCB,RATIOS,SSA1,'RATIOS  ');       103
 93     1    1                   IF STATCD¬='  ' THEN SIGNAL CONDITION(DLIERR);                  104
 94     1    1                   ELSE TOTAL=TOTAL+1;
 96     1    1
```

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              /* COURSE FILE LOAD - FILE BUILD ROUTINE */                                                PAGE

 STMT LEVEL NEST

   97    1    1              READ FILE(SYSIN) INTO(CARD);                                          105
   98    1    1              END;                                                                  106
   99    1               IF TYP='REAL' THEN DO:                                                    107
  101    1    1              DO I=1 BY 1 WHILE(TYP='REAL');                                        108
  102    1    2                 IF OVMD¬=LOCK THEN GO TO START;                                    109
  104    1    2                 CA(I)=CARD;                                                        110
  105    1    2                 READ FILE(SYSIN) INTO(CARD);                                       111
  106    1    2                 END;                                                               112
  107    1    1              I=I-1; MAX=I; SWAP='1'B;                                              113
  110    1    1              DO WHILE(SWAP);                                                       114
  111    1    2                 SWAP='0'B; MAX=MAX-1;                                              115
  113    1    2                 DO J=1 BY 1 TO MAX;                                                116
  114    1    3                    IF SUBSTR(CA(J),19,7)>SUBSTR(CA(J+1),19,7) THEN                 117
  115    1    3                       CALL SWITCH;                                                 118
  116    1    3                    END;                                                            119
  117    1    2                 END;                                                               120
  118    1    1              DO J=1 BY 1 TO I;                                                     121
  119    1    2                 PUT FILE(SYSPRINT) SKIP EDIT(CA(J))(A);                            122
  120    1    2                 GET STRING(CA(J)) EDIT(RELCRS)(X(18),A(4),X(1),A(2));              123
  121    1    2                 CALL PLITDLI(FIVE,INSERT,CRSEPCB,RELCRS,SSA1,'RELCRS  ');          124
  122    1    2                 IF STATCD¬='  ' THEN SIGNAL CONDITION(DLIERR);                     125
  124    1    2                 ELSE TOTAL=TOTAL+1;                                                126
  125    1    2                 END;                                                               127
  126    1    1              END;                                                                  128
  127    1               IF TYP='RMAI' THEN DO;                                                    129
  129    1    1              DO I=1 BY 1 WHILE(TYP='RMAI');                                        130
  130    1    2                 IF OVMD¬=LOCK THEN GO TO START;                                    131
  132    1    2                 CA(I)=CARD;                                                        132
  133    1    2                 READ FILE(SYSIN) INTO(CARD);                                       133
  134    1    2                 END;                                                               134
  135    1    1              I=I-1; MAX=I; SWAP='1'B;                                              135
  138    1    1              DO WHILE(SWAP);                                                       136
  139    1    2                 SWAP='0'B; MAX=MAX-1;                                              137
  141    1    2                 DO J=1 BY 1 TO MAX;                                                138
  142    1    3                    IF SUBSTR(CA(J),19,6)>SUBSTR(CA(J+1),19,6) THEN                 139
  143    1    3                       CALL SWITCH;                                                 140
  144    1    3                    END;                                                            141
  145    1    2                 END;                                                               142
  146    1    1              DO J=1 BY 1 TO I;                                                     143
  147    1    2                 PUT FILE(SYSPRINT) SKIP EDIT(CA(J))(A);                            144
  148    1    2                 GET STRING(CA(J)) EDIT(CLSRM)(X(18),A(5),A(3),F(3),                145
                                     F(1),F(5,1),F(5));                                            146
  149    1    2                 CALL PLITDLI(FIVE,INSERT,CRSEPCB,CLSRM,SSA1,'CLSRM   ');           147
  150    1    2                 IF STATCD¬='  ' THEN SIGNAL CONDITION(DLIERR);                     148
  152    1    2                 ELSE TOTAL=TOTAL+1;                                                149
  153    1    2                 END;                                                               150
  154    1    1              END;                                                                  151
  155    1               IF TYP='STAI' THEN DO;                                                    152
  157    1    1              DO I=1 BY 1 WHILE(TYP='STAI');                                        153
  158    1    2                 IF OVMD¬=LOCK THEN GO TO START;                                    154
  160    1    2                 CA(I)=CARD;                                                        155
  161    1    2                 READ FILE(SYSIN) INTO(CARD);                                       156
  162    1    2                 END;                                                               157
  163    1    1              I=I-1; MAX=I; SWAP='1'B;                                              158
  164    1    1              DO WHILE(SWAP);                                                       159
```

```
                        /* COURSE FILE LOAD - FILE BUILD ROUTINE */                          PAGE

STMT LEVEL NEST

167     1    2                      SWAP='0'B; MAX=MAX-1;                                      160
169     1    2                      DO J=1 BY 1 TO MAX;                                        161
170     1    3                         IF SUBSTR(CA(J),19,3)>SUBSTR(CA(J+1),19,3) THEN         162
171     1    3                            CALL SWITCH;                                         163
172     1    3                         END;                                                    164
173     1    2                      END;                                                       165
174     1    1                   DO J=1 BY 1 TO I;                                             166
175     1    2                      PUT FILE(SYSPRINT) SKIP EDIT(CA(J))(A);                    167
176     1    2                      GET STRING(CA(J)) EDIT(STDATA)(X(10),F(3),F(5));           168
177     1    2                      CALL PLITDLI(FIVE,INSERT,CRSEPCB,STDATA,SSA1,              169
                                       'STDATA   ');                                           170
178     1    2                      IF STATCD¬=' ' THEN SIGNAL CONDITION(DLIERR);              171
180     1    2                      ELSE TOTAL=TOTAL+1;                                        172
181     1    2                      END;                                                       173
182     1    1                   END;                                                          174
183     1                     IF TYP='APAI' THEN DO;                                           175
185     1    1                   DO I=1 BY 1 WHILE(TYP='APAI');                                176
186     1    2                      IF CWND=¬LOCK THEN GO TO START;                            177
188     1    2                      CA(I)=CARD;                                                178
189     1    2                      READ FILE(SYSIN) INTO(CARD);                               179
190     1    2                      END;                                                       180
191     1    1                   I=I-1; MAX=I; SWAP='1'B;                                      181
194     1    1                   DO WHILE(SWAP);                                               182
195     1    2                      SWAP='0'B; MAX=MAX-1;                                      183
197     1    2                      DO J=1 BY 1 TO MAX;                                        184
198     1    3                         IF SUBSTR(CA(J),19,3)>SUBSTR(CA(J+1),19,3) THEN         185
199     1    3                            CALL SWITCH;                                         186
200     1    3                         END;                                                    187
201     1    2                      END;                                                       188
202     1    1                   DO J=1 BY 1 TO I;                                             189
203     1    2                      PUT FILE(SYSPRINT) SKIP EDIT(CA(J))(A);                    190
204     1    2                      GET STRING(CA(J)) EDIT(CMPLBGRP)(X(10),F(3),F(5));         191
205     1    2                      CALL PLITDLI(FIVE,INSERT,CRSEPCB,CMPLBGRP,SSA1,            192
                                       'CMPLBGRP ');                                           193
206     1    2                      IF STATCD¬=' ' THEN SIGNAL CONDITION(DLIERR);              194
208     1    2                      ELSE TOTAL=TOTAL+1;                                        195
209     1    2                      END;                                                       196
210     1    1                   END;                                                          197
211     1                     GO TO START;                                                     198
                                                                                               199
212     1                     END DLITPLI;                                                     200
```

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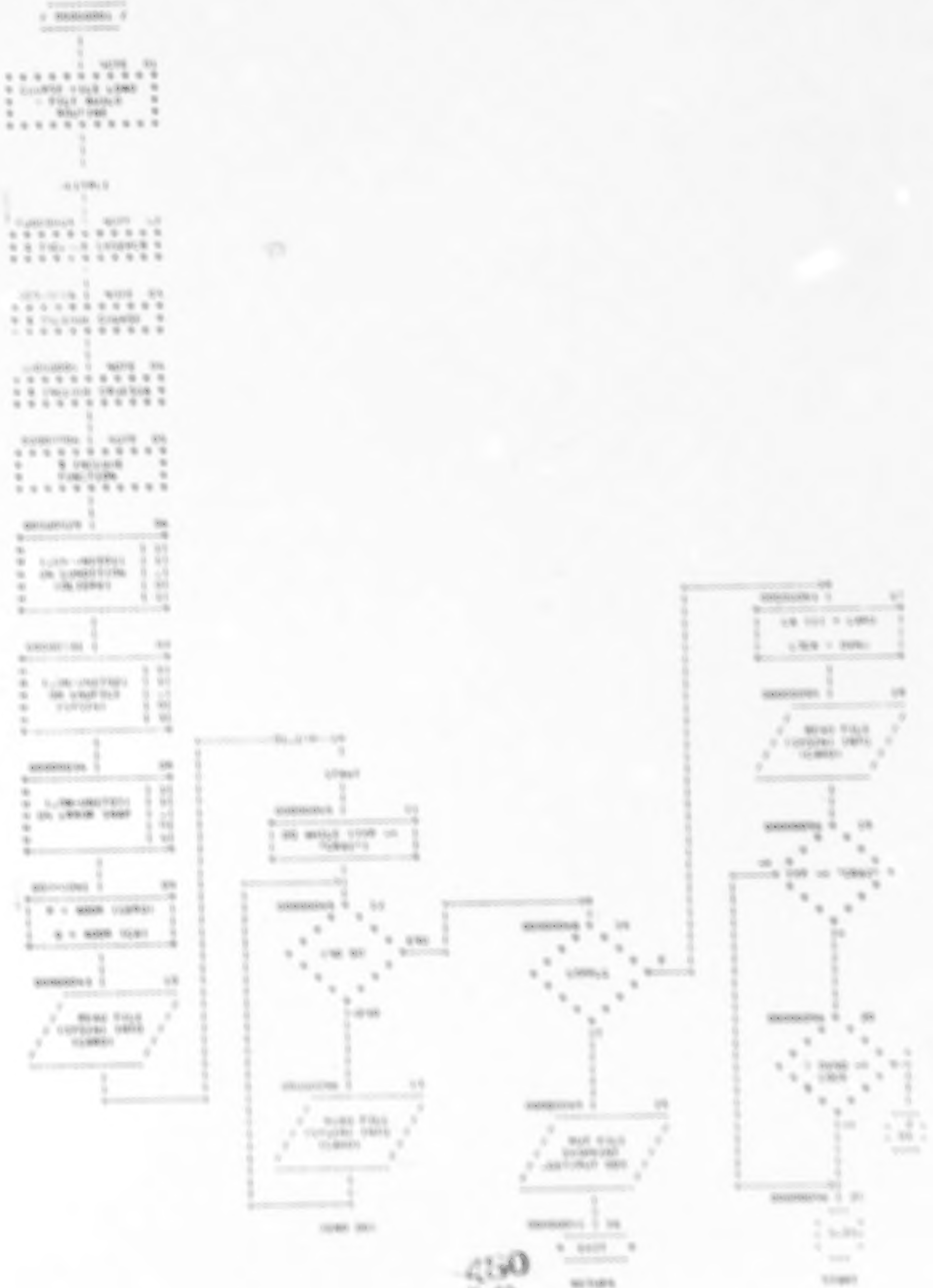


CHART TITLE - PROCEDURE BLITPL1 (CRSEPCB) OPTIONS (MAIN)

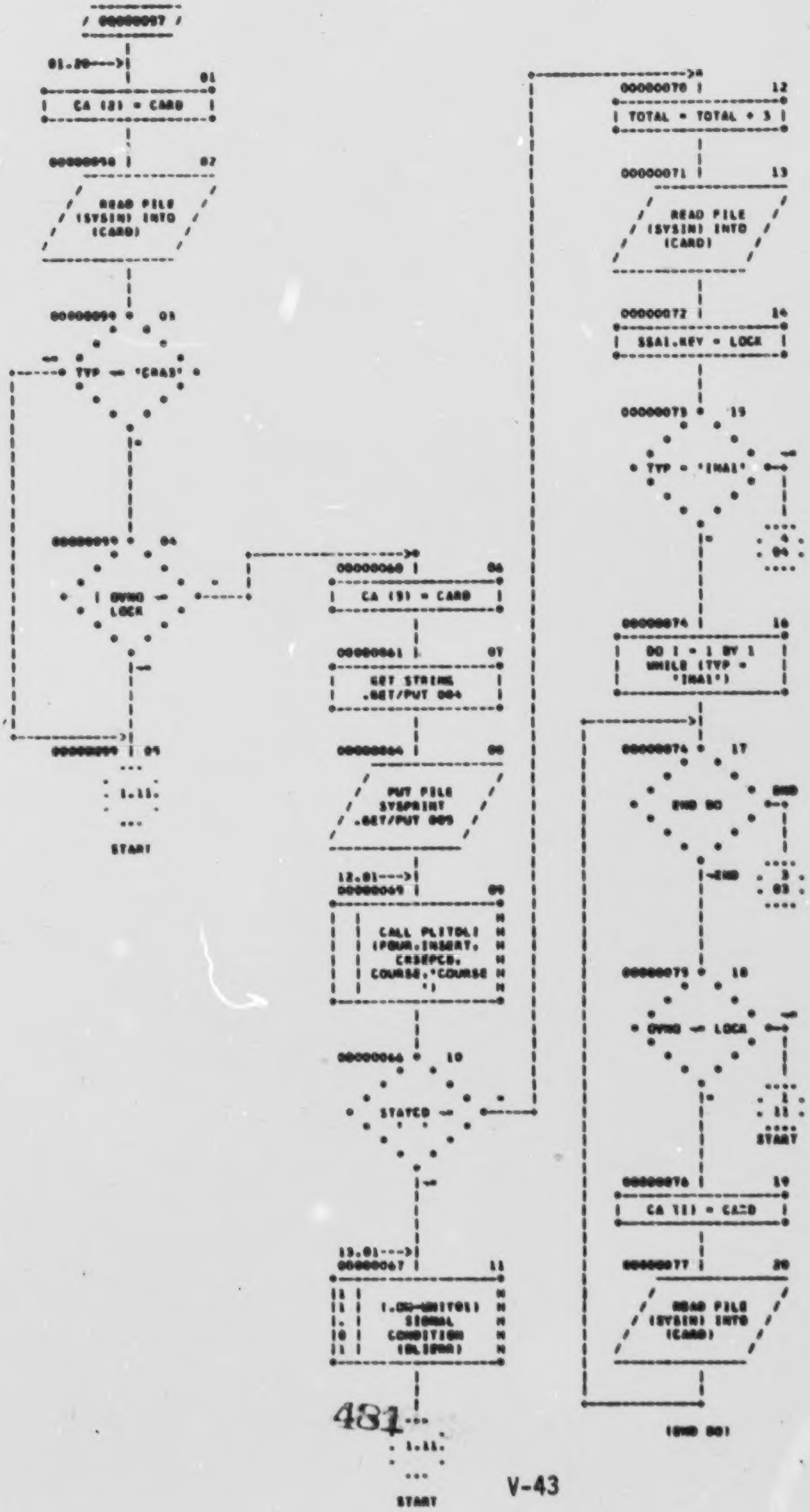

/ 00000057 /
01.20--->
01
CA (2) = CARD
00000058 02
READ FILE (SYSIN) INTO (CARD)
00000059 03
TYP ¬= 'CRAS'
00000059 04
OVNO LOCK
00000059 05
1.11.
START
00000060 06
CA (3) = CARD
00000061 07
GET STRING .GET/PUT 004
00000064 08
PUT FILE SYSPRINT .GET/PUT 005
12.01--->
00000065 09
CALL PLITDLI (FOUR,INSERT, CRSEPCB, COURSE,'COURSE ')
00000066 10
STATCD ¬=
13.01--->
00000067 11
(.ON-UNITS1) SIGNAL CONDITION (BLIERR)
1.11.
START
00000070 12
TOTAL = TOTAL + 3
00000071 13
READ FILE (SYSIN) INTO (CARD)
00000072 14
SSA1.KEY = LOCK
00000073 15
TYP = 'INAI'
4 04
00000074 16
DO I = 1 BY 1 WHILE (TYP = 'INAI')
00000074 17
END DO
END
¬END
3 03
00000075 18
OVNO ¬= LOCK
1 11
START
00000076 19
CA (1) = CARD
00000077 20
READ FILE (SYSIN) INTO (CARD)
(END DO)

CHART TITLE - PROCEDURE DLITPLI (CRSEPCB) OPTIONS (MAIN)

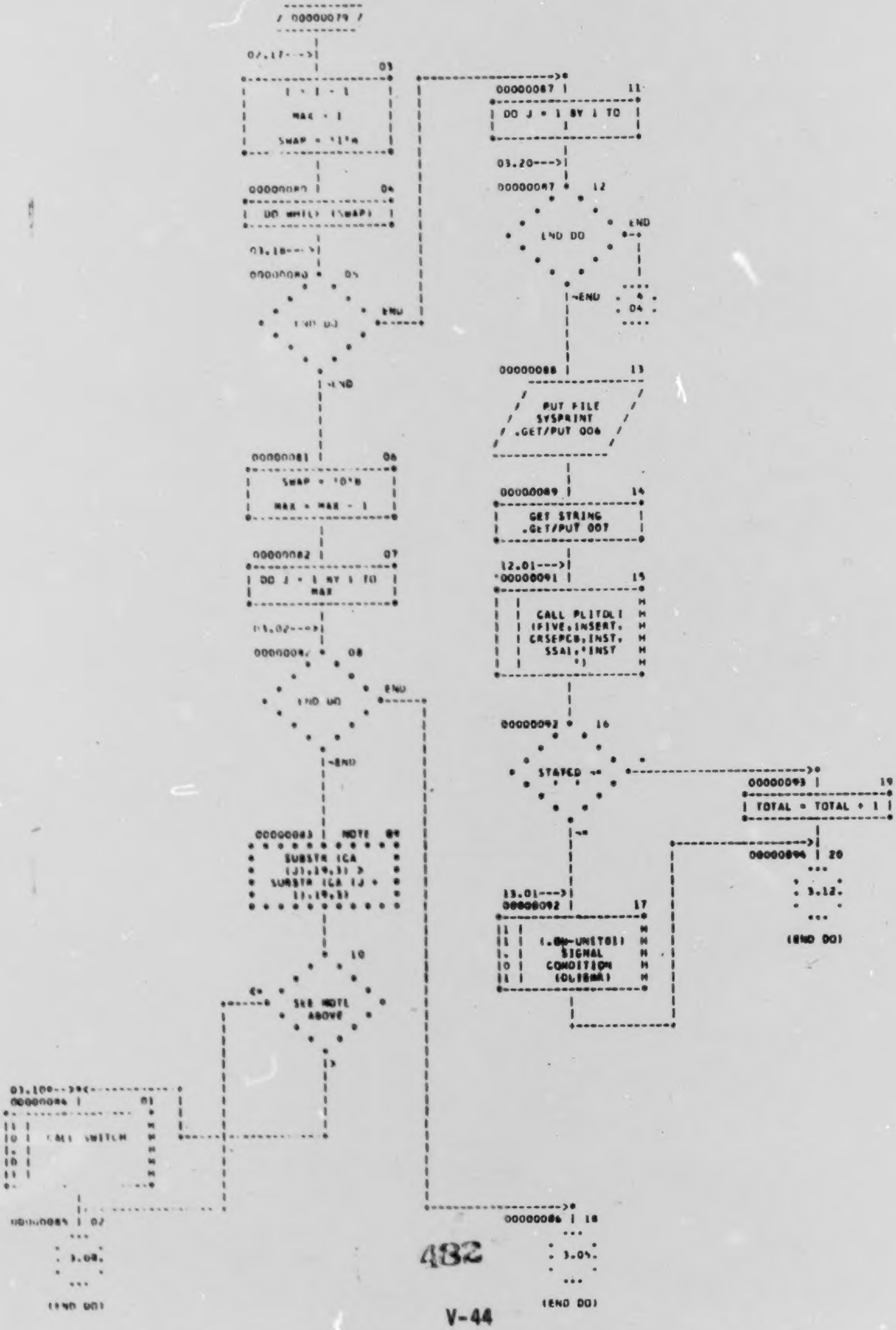

/ 00000079 /
07.17--->
03
I = 1 - 1
MAX = 1
SWAP = '1'B
00000080 04
DO WHILE (SWAP)
03.18--->
00000080 05
END DO
END
¬END
00000081 06
SWAP = '0'B
MAX = MAX - 1
00000082 07
DO J = 1 BY 1 TO MAX
03.02--->
00000082 08
END DO
END
¬END
00000083 NOTE 09
SUBSTR (CA (J),19,3) > SUBSTR (CA (J + 1),19,3)
10
SEE NOTE ABOVE
03.100-->
00000084 01
CALL SWITCH
00000085 02
3.08.
(END DO)
00000087 11
DO J = 1 BY 1 TO
03.20--->
00000087 12
END DO
END
¬END
04
00000088 13
PUT FILE SYSPRINT .GET/PUT 006
00000089 14
GET STRING .GET/PUT 007
12.01--->
00000091 15
CALL PLITDLI (FIVE,INSERT, CRSEPCB,INST, SSA1,'INST ')
00000092 16
STATED ¬=
00000093 19
TOTAL = TOTAL + 1
00000094 20
3.12.
(END DO)
13.01--->
00000092 17
(.ON-UNIT01) SIGNAL CONDITION (DLIERR)
00000086 18
3.05.
(END DO)

CHART TITLE - PROCEDURE DLITPLI (CASEPCB) OPTIONS (MAIN)

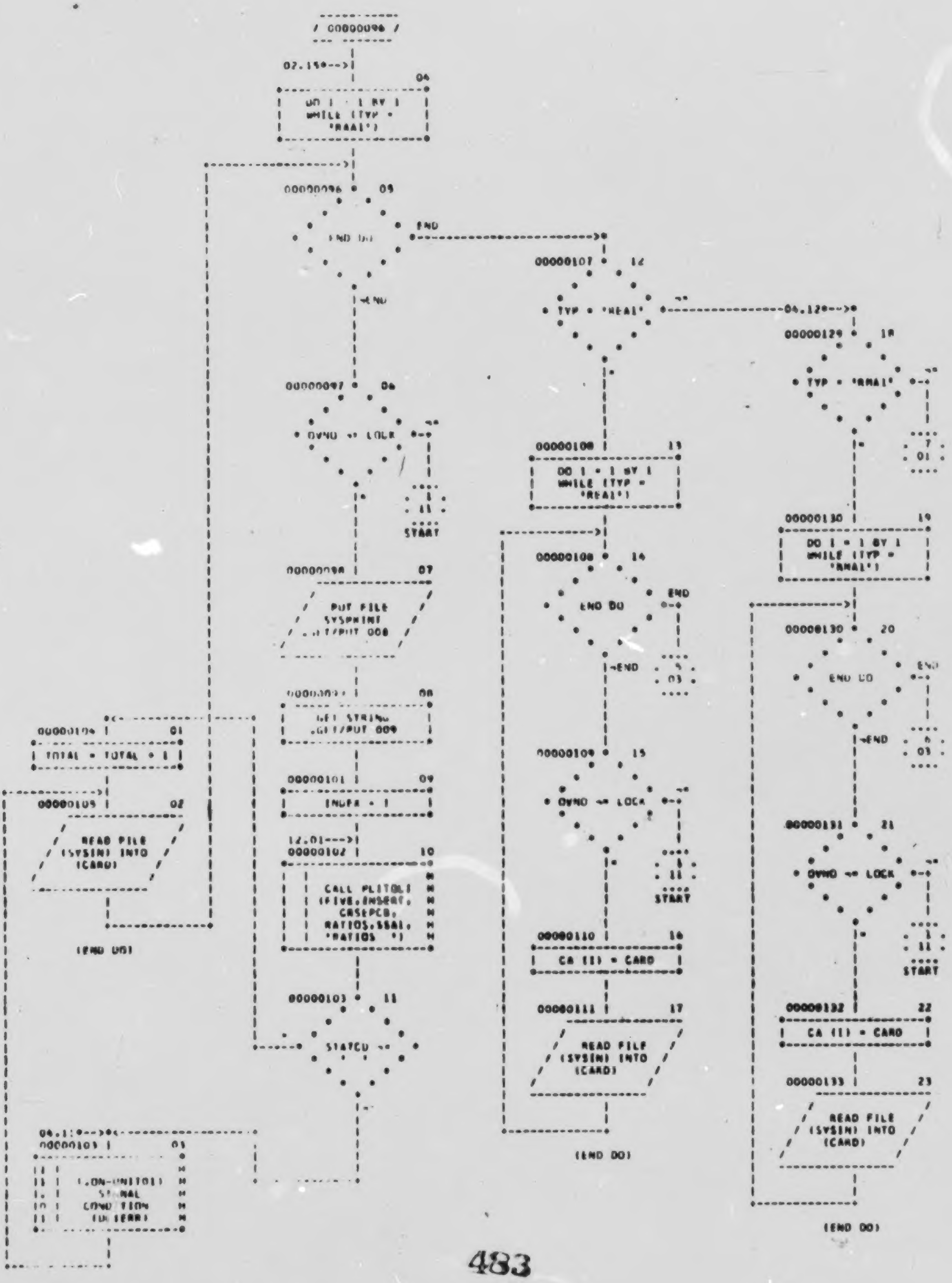

/ 00000096 /
02.15*-->
04
DO I = 1 BY 1
WHILE (TYP =
'RAAL')
00000096 05
END DO
END
=END
00000097 06
OVNO =- LOCK
11
START
00000098 07
PUT FILE
SYSPRINT
.GET/PUT 008
00000099 08
GET STRING
.GET/PUT 009
00000101 09
INDEX = 1
12.01--->
00000102 10
CALL PLITDLI
(FIVE,INSERT,
CASEPCB,
RATIOS,SSA1,
'RATIOS ')
00000103 11
STATCD =
00000104 01
TOTAL = TOTAL + 1
00000105 02
READ FILE
(SYSIN) INTO
(CARD)
(END DO)
04.11*-->
00000103 03
(.ON-UNIT01)
SIGNAL
CONDITION
(ERR)
00000107 12
TYP = 'REAL'
04.12*-->
00000108 13
DO I = 1 BY 1
WHILE (TYP =
'REAL')
00000108 14
END DO
END
5
03
=END
00000109 15
OVNO =- LOCK
11
START
00000110 16
CA (I) = CARD
00000111 17
READ FILE
(SYSIN) INTO
(CARD)
(END DO)
00000129 18
TYP = 'RAAL'
7
01
00000130 19
DO I = 1 BY 1
WHILE (TYP =
'RAAL')
00000130 20
END DO
END
6
03
=END
00000131 21
OVNO =- LOCK
11
START
00000132 22
CA (I) = CARD
00000133 23
READ FILE
(SYSIN) INTO
(CARD)
(END DO)

CHART TITLE - PROCEDURE DLITPLI (CASPPCB) OPTIONS (MAIN)

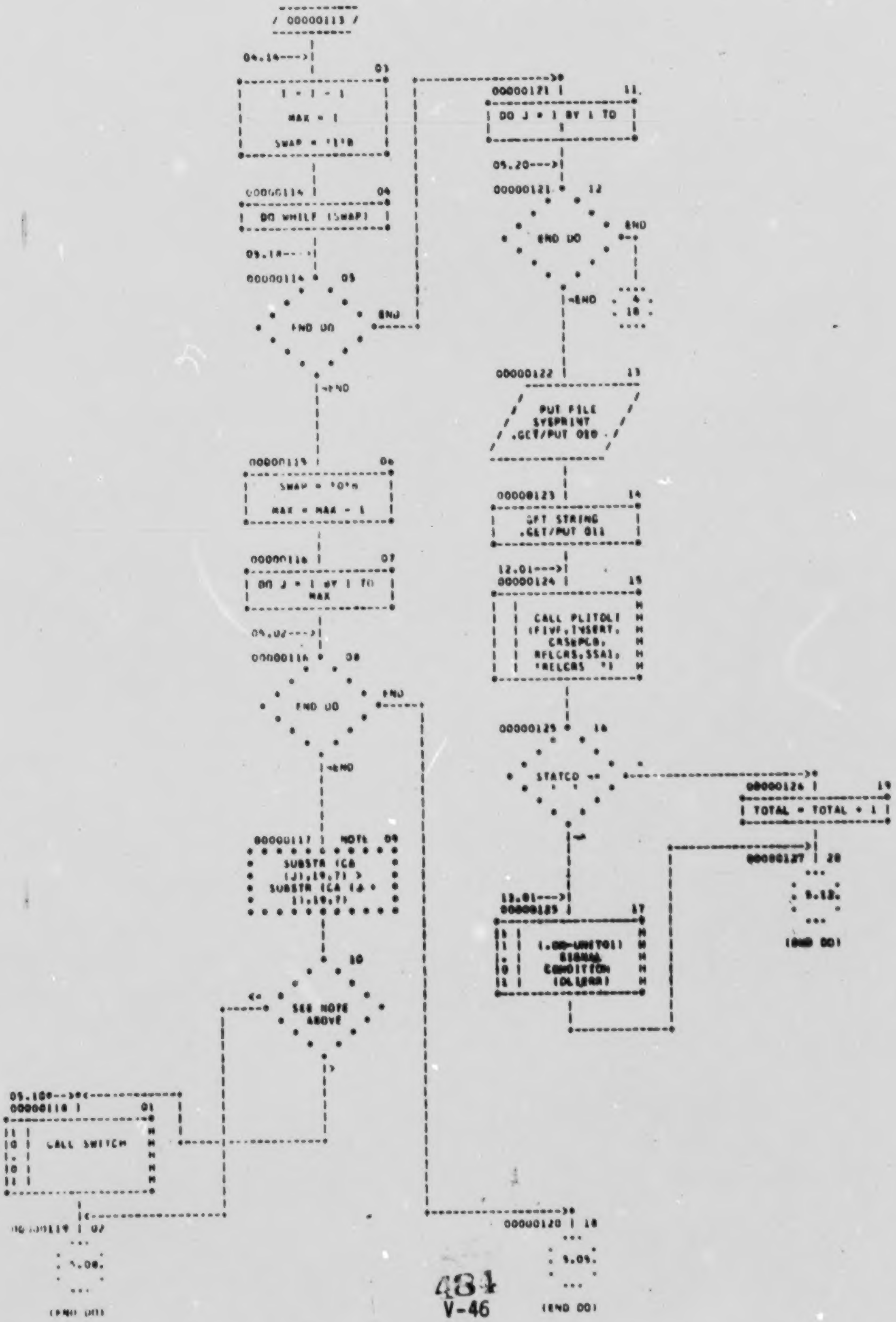

/ 00000113 /
04.14--->
03
I = I - 1
MAX = I
SWAP = '1'B
00000114 04
DO WHILE (SWAP)
05.18--->
00000114 05
END DO
END
¬END
00000115 06
SWAP = '0'B
MAX = MAX - 1
00000116 07
DO J = 1 BY 1 TO MAX
05.02--->
00000116 08
END DO
END
¬END
00000117 NOTE 09
SUBSTR (CA (J),19,7) > SUBSTR (CA (J + 1),19,7)
10
<=
SEE NOTE ABOVE
>
05.10--->
00000118 01
CALL SWITCH
00000119 07
5.08.
(END DO)
00000121 11
DO J = 1 BY 1 TO I
05.20--->
00000121 12
END DO
END
4.18
¬END
00000122 13
PUT FILE SYSPRINT .GET/PUT 010 .
00000123 14
GET STRING .GET/PUT 011
12.01--->
00000124 15
CALL PLITDLI (FIVE,INSERT, CASEPCB, RELCAS,SSA1, 'RELCAS ')
00000125 16
STATCD = ' '
=
¬=
00000126 19
TOTAL = TOTAL + 1
00000127 20
5.12.
(END DO)
13.01--->
00000125 17
(.DD-UNIT01) SIGNAL CONDITION (DLIERR)
00000120 18
5.05.
(END DO)

CHART TITLE - PROCEDURE DLITPLI (CRSEPCB) OPTIONS (MAIN)

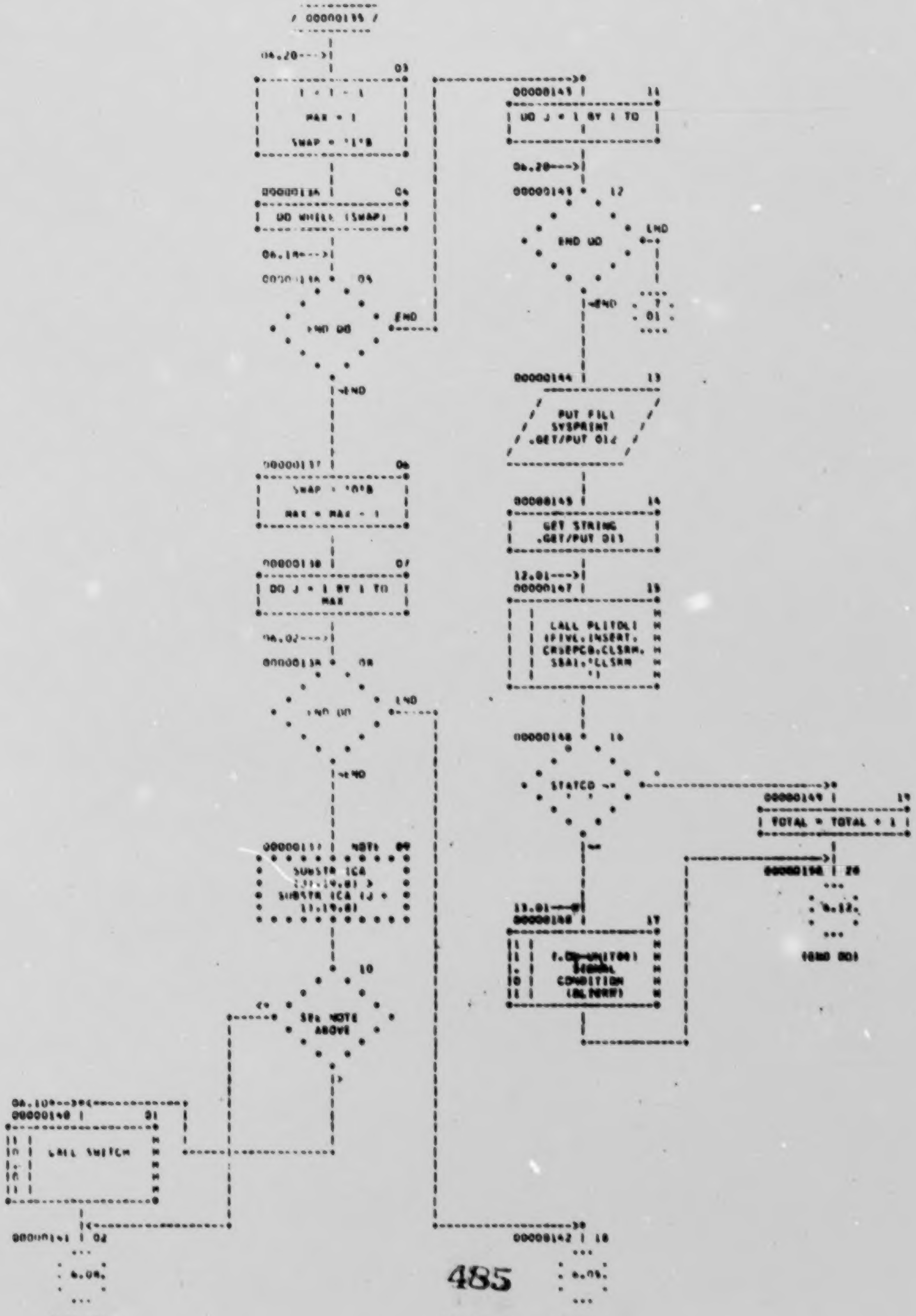
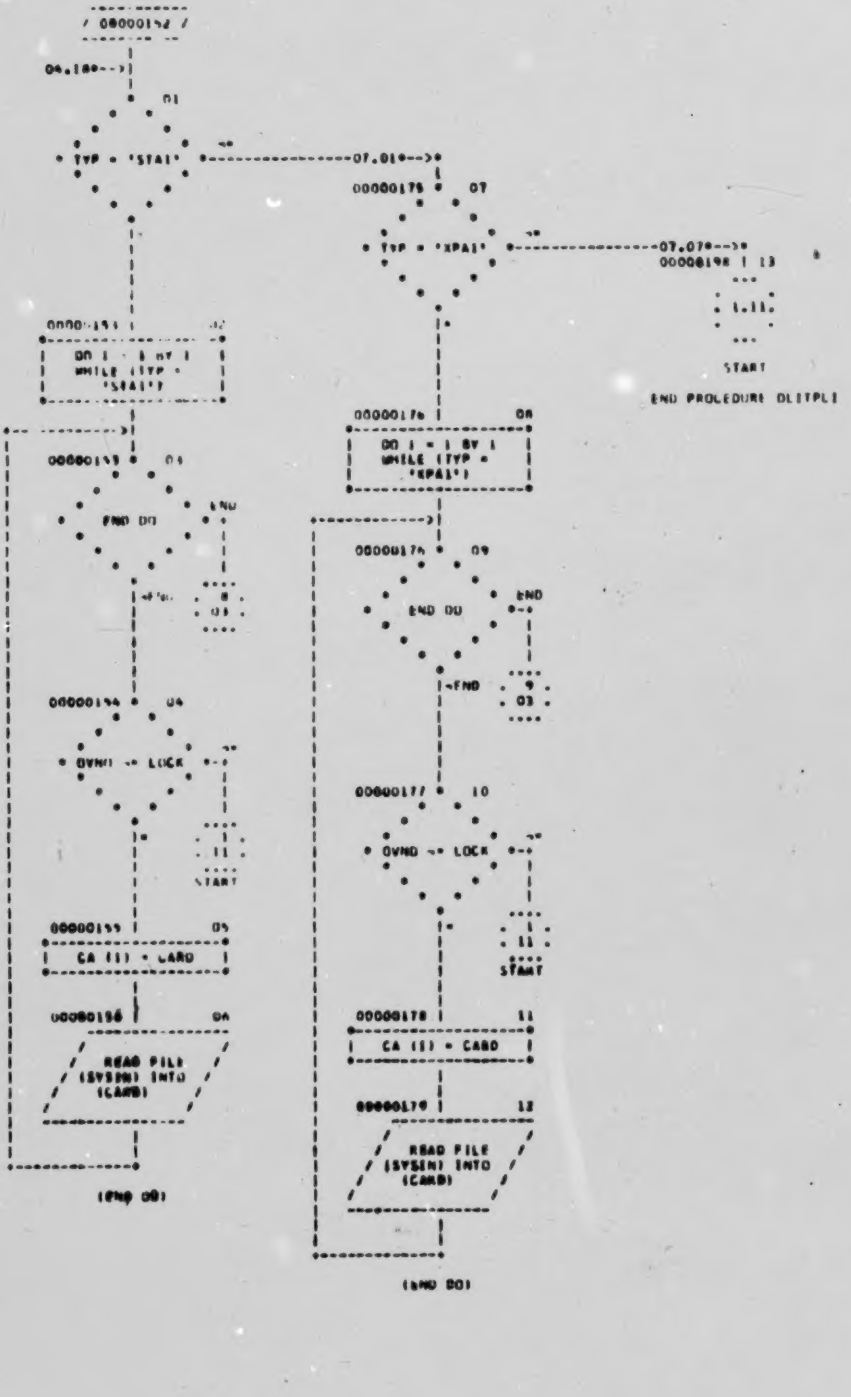
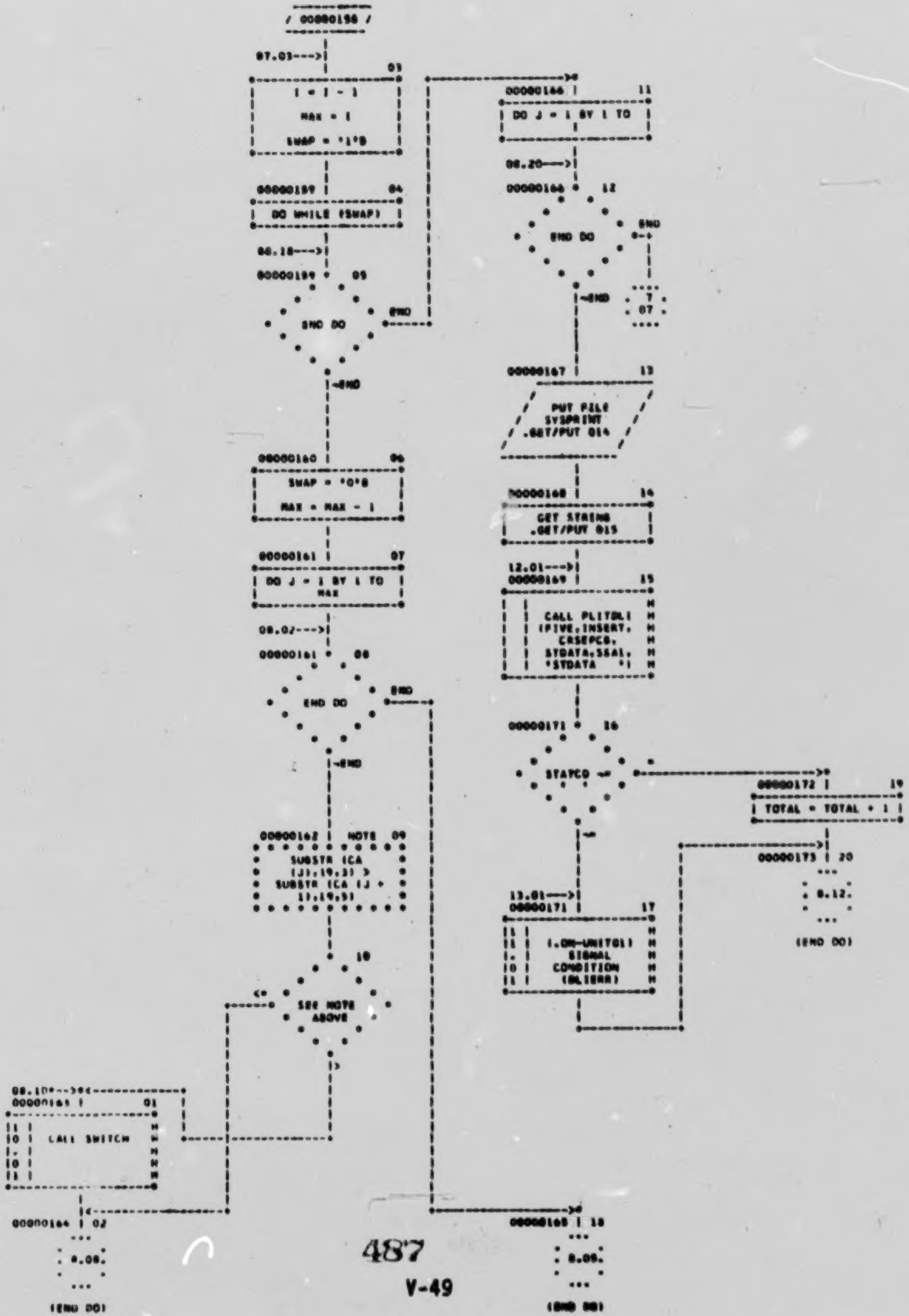

/ 00000135 /
06.20--->
03
I = I - 1
MAX = 1
SWAP = '1'B
00000136 04
DO WHILE (SWAP)
06.18--->
00000136 05
END DO
END
¬END
00000137 06
SWAP = '0'B
MAX = MAX - 1
00000138 07
DO J = 1 BY 1 TO MAX
06.02--->
00000138 08
END DO
END
¬END
00000139 NOTE 09
SUBSTR (CA (J),19,8) > SUBSTR (CA (J + 1),19,8)
10
<=
SEE NOTE ABOVE
>
06.10--->
00000140 01
CALL SWITCH
00000141 02
6.08.
(END DO)
00000143 11
DO J = 1 BY 1 TO
06.20--->
00000143 12
END DO
END
¬END
7 01
00000144 13
PUT FILE SYSPRINT .GET/PUT 012
00000145 14
GET STRING .GET/PUT 013
12.01--->
00000147 15
CALL PLITDLI (FIVE,INSERT, CRSEPCB,CLSRM, SSA1,'CLSRM ')
00000148 16
STATCD ¬= ' '
=
00000149 19
TOTAL = TOTAL + 1
00000150 20
6.12.
(END DO)
13.01--->
00000148 17
(ON-UNIT00) SIGNAL CONDITION (DLIERR)
00000142 18
6.05.
(END DO)

CHART TITLE - PROCEDURE DLITPLI (CRSEPLB) OPTIONS (MAIN)


00000152
04.18*
01
TYP = 'STAT'
07.01*
00000175
07
TYP = 'XPAT'
07.07*
00000198
13
11
START
END PROCEDURE DLITPLI
00000153
02
DO I = 1 BY 1 WHILE (TYP = 'STAT')
00000176
08
DO I = 1 BY 1 WHILE (TYP = 'XPAT')
00000153
03
END DO
END
03
00000176
09
END DO
END
-END
9
03
00000154
04
OVND -= LOCK
11
START
00000177
10
OVND -= LOCK
11
START
00000155
05
CA (I) = CARD
00000178
11
CA (I) = CARD
00000156
06
READ FILE (SYSIN) INTO (CARD)
00000179
12
READ FILE (SYSIN) INTO (CARD)
(END DO)
(END DO)

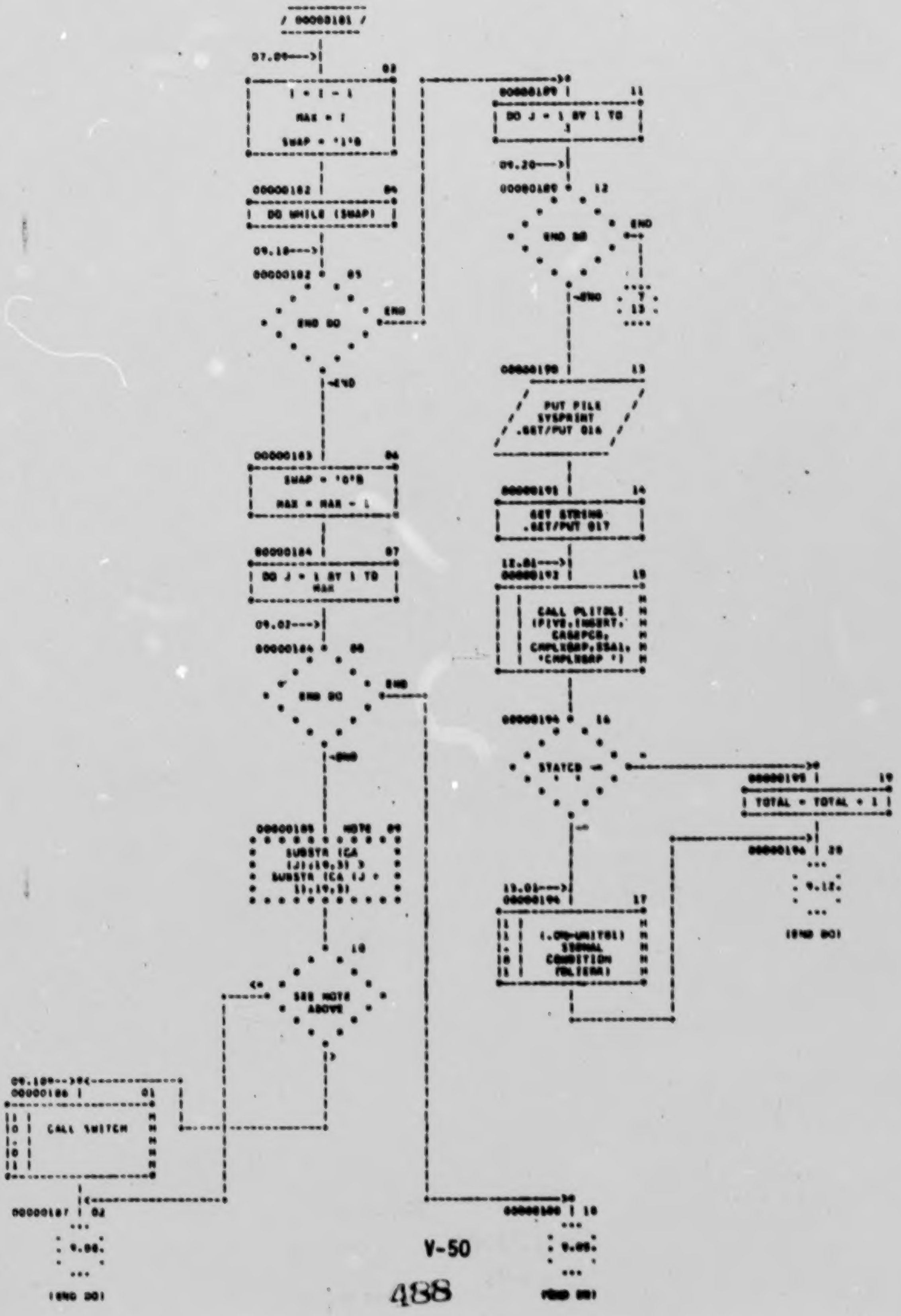
BEST COPY AVAILABLE

CHART TITLE - PROCEDURE DLITPLI (CRSEPCD) OPTIONS (MAIN)


/ 00000156 /
07.03--->
03
I = I - 1
MAX = I
SWAP = '1'B
00000157 04
DO WHILE (SWAP)
06.18--->
00000159 05
END DO
END
¬END
00000160 06
SWAP = '0'B
MAX = MAX - 1
00000161 07
DO J = 1 BY 1 TO MAX
08.02--->
00000161 08
END DO
END
¬END
00000162 NOTE 09
SUBSTR (CA (J),19,3) > SUBSTR (CA (J + 1),19,3)
10
SEE NOTE ABOVE
<
>
08.10*--->
00000163 01
CALL SWITCH
00000164 02
8.08.
(END DO)
00000166 11
DO J = 1 BY 1 TO
08.20--->
00000166 12
END DO
END
7
07
¬END
00000167 13
PUT FILE SYSPRINT .GET/PUT 014
00000168 14
GET STRING .GET/PUT 015
12.01--->
00000169 15
CALL PLITDLI (FIVE,INSERT, CRSEPCB, STDATA,SSA1, 'STDATA ')
00000171 16
STATCD ¬= ' '
00000172 19
TOTAL = TOTAL + 1
00000173 20
8.12.
(END DO)
¬=
13.01--->
00000171 17
(.ON-UNIT01) SIGNAL CONDITION (DLIERR)
00000165 18
8.05.
(END DO)

BEST COPY AVAILABLE

CHART TITLE - PROCEDURE BLITPL: (CASEPCA) OPTIONS (MAIN)


/ 00000181 /
07.09--->
02
I = I - 1
MAX = I
SWAP = '1'B
00000182 04
DO WHILE (SWAP)
09.18--->
00000182 05
END DO
END
-END
00000183 06
SWAP = '0'B
MAX = MAX - 1
00000184 07
DO J = 1 BY 1 TO MAX
09.02--->
00000184 08
END DO
END
-END
00000185 NOTE 09
SUBSTR (CA (J),19,3) > SUBSTR (CA (J + 1),19,3)
10
SEE NOTE ABOVE
<=
>
09.10--->
00000186 01
CALL SWITCH
00000187 02
9.08.
(END DO)
00000189 11
DO J = 1 BY 1 TO I
09.20--->
00000189 12
END DO
END
7
13
-END
00000190 13
PUT FILE SYSPRINT .GET/PUT 016
00000191 14
GET STRING .GET/PUT 017
12.01--->
00000192 15
CALL PLITDLI (FIVE,INSERT, CASEPCB, CMPLXSAP,SSA1, 'CMPLXSAP ')
00000194 16
STATCD -= ' '
19
00000195
TOTAL = TOTAL + 1
00000196 20
9.12.
(END DO)
15.01--->
00000194 17
(.ON-UNIT01) SIGNAL CONDITION (ALTERR)
00000188 18
9.05.
(END DO)

```
09/11/74                        AUTOFLOW CHART SET -                             PAGE  10

 CHART TITLE - PROCEDURE SWITCH



                                  ------------
                                  / 00000020 /
                                  ------------

                               09.01*-->*

                                    SWITCH

                                       *
                               00000022 |          01
                               *-----------------------*
                               |   TEMP = CA (J)       |
                               |                       |
                               | CA (J) = CA (J +      |
                               |         1)            |
                               |                       |
                               | CA (J + 1) = TEMP     |
                               |                       |
                               |    SWAP = '1'B        |
                               *-----------------------*
                                       |
                                       |
                               00000026 | 02
                                   ----------
                                   *  EXIT  *
                                   ----------

                                    RETURN

                               END PROCEDURE SWITCH
```

CHART TITLE ON-UNIT ACTION BLOCKS

```
                    -----------
                   / 00000029 /
                   -----------

             01.06--->*

            .ON-UNIT01

                         *
             00000029 |  NOTE  01
            * * * * * * * * * * *
            *   ON CONDITION    *
            *     (ULIERR)      *
            * * * * * * * * * * *
                         |
                         |
             00000029 |         02
                  ----------------
                 /               /
                /   PUT FILE    /
               /   SYSPRINT    /
              / .GET/PUT 001  /
             /               /
            ----------------
            END .ON-UNIT01


                     -----------
                    / 00000031 /
                    -----------

             01.07--->*

            .ON-UNIT02

                         *
             00000031 |  NOTE  03
            * * * * * * * * * * *
            *    ON ENDFILE     *
            *     (SYSIN)       *
            *                   *
            *      BEGIN        *
            * * * * * * * * * * *
                         |
                         |
             00000032 |         04
            *-------------------*
            |   STPFLG = '1'B   |
            |                   |
            |   TYP = 'CRAL'    |
            *-------------------*
                         |
                         |
             00000033 | 05
                  ---------
                  *  EXIT  *
                  ---------

                 END .ON-UNIT02


                     -----------
                    / 00000034 /
                    -----------

             01.08--->*

            .ON-UNIT03

                         *
             00000034 |  NOTE  06
            * * * * * * * * * * *
            *   ON ERROR SNAP   *
            *                   *
            *      BEGIN        *
            * * * * * * * * * * *
                         |
                         |
             00000035 |         07
                  ----------------
                 /               /
                /   PUT FILE    /
               /   SYSPRINT    /
              / .GET/PUT 002  /
             /               /
            ----------------
                         |
                         |
             00000039 | 08
                  ---------
                  *  HALT  *
                  ---------

                    STOP

                 END .ON-UNIT03
```

```
SOURCE LISTING.


STMT LEVEL NEST
                            /* COURSE FILE UPDATE PROGRAM */                          1
  1              DLITPLI: PROCEDURE(CRSEPCB) OPTIONS(MAIN);                           2
                                                                                    490
                          /***************/                                         491
                          /* COURSE PCB */                                          492
                          /***************/                                         493
                                                                                    494
  2     1                 DECLARE 1 CRSEPCB,                                        495
                                    2 DBNAME CHAR(8),                               496
                                    2 LEVFD CHAR(2),                                497
                                    2 STATCD CHAR(2),                               498
                                    2 PROCOPT CHAR(4),                              499
                                    2 JCBADDR POINTER,                              500
                                    2 SEGFD CHAR(8),                                501
                                    2 KEYLEN FIXED BIN(31),                         502
                                    2 NOSS FIXED BIN(31),                           503
                                    2 KEYFD CHAR(12),                               504
                                    2 SN1 CHAR(8),                                  505
                                    2 SN2 CHAR(8),                                  506
                                    2 SN3 CHAR(8),                                  507
                                    2 SN4 CHAR(8),                                  508
                                    2 SN5 CHAR(8),                                  509
                                    2 SN6 CHAR(8),                                  510
                                    2 SN7 CHAR(8);                                  511
                                                                                      3
                                                                                    513
                          /*********************************************/           514
                          /* THIS SET OF DECLARATIONS DESCRIBES EACH */             515
                          /* OF THE SEGMENTS IN THE COURSE DATA BASE */             516
                          /*********************************************/           517
                                                                                    518
  3     1                 DECLARE                                                   519
                              1 COURSE,                                             520
                                 2 PREFIX CHAR(10),                                 521
                                 2 CRSNO CHAR(4),                                   522
                                 2 CRSNAME CHAR(60),                                523
                                 2 DEPT CHAR(6),                                    524
                                 2 LENGTH FIXED DEC(3,1),                           525
                                 2 QUALTIME FIXED DEC(3,1),                         526
                                 2 BUPCAP FIXED DEC(3,0),                           527
                                 2 INSTCAP FIXED DEC(3,0),                          528
                                 2 CRSTYPE FIXED DEC(1,0),                          529
                                 2 MINCON FIXED DEC(3,0),                           530
                                 2 CHNGDATE FIXED DEC(5,0),                         531
                                 2 OFFSET FIXED DEC(5,0),                           532
                                 2 NBUPCAP FIXED DEC(3,0),                          533
                                 2 NINSTCAP FIXED DEC(3,0),                         534
                                 2 NMINCON FIXED DEC(3,0),                          535
                                 2 NLENGTH FIXED DEC(3,1),                          536
                                 2 NECAWARD CHAR(4),                                537
                                 2 WAIT FIXED DEC(3,0),                             538
                                 2 JNO CHAR(4),                                     539
```

```
          /* COURSE FILE UPDATE PROGRAM */                                  PAGE

STMT LEVEL NEST

                              2 TPF1(2) FIXED DEC(5,0),
                              2 TPF2(3) FIXED DEC(5,1),
                            1 INST,
                              2 INSTNO FIXED DEC(3,0),
                              2 INSTNAME CHAR(15),
                              2 PERQUAL FIXED DEC(3,0),
                              2 CURR BIT(1) ALIGNED,
                              2 INGRP FIXED DEC(3,0),
                            1 RATIOS,
                              2 INDEX FIXED DEC(3,0),
                              2 RATIO FIXED DEC(3,1),
                              2 NUMINST FIXED DEC(3,0),
                              2 CONTHRS FIXED DEC(5,1),
                              2 TYPE FIXED DEC(1,0),
                              2 RATGRP FIXED DEC(3,0),
                            1 RELCRS,
                              2 REL CHAR(4),
                              2 RELGRP CHAR(2),
                            1 CLSRM,
                              2 BLDG CHAR(5),
                              2 ROOM CHAR(3),
                              2 RMCAP FIXED DEC(3,0),
                              2 RMTYPE FIXED DEC(1,0),
                              2 REQHRS FIXED DEC(5,1),
                              2 AVAILHRS FIXED DEC(5,0),
                            1 STDATA,
                              2 TYPE FIXED DEC(3,0),
                              2 FACTOR FIXED DEC(3,0),
                            1 CMPLAGRP,
                              2 TYPE FIXED DEC(3,0),
                              2 FACTOR FIXED DEC(3,0);


                          /*******************/
                          /* FUNCTION CODES */
                          /*******************/

   4     1                DECLARE (GET_UNIQUE          CHAR(4) INIT('GU  '),
                                   GET_NEXT            CHAR(4) INIT('GN  '),
                                   GET_NEXT_NP         CHAR(4) INIT('GNP '),
                                   GET_HOLD_UNIQUE     CHAR(4) INIT('GHU '),
                                   GET_HOLD_NEXT       CHAR(4) INIT('GHN '),
                                   GET_HOLD_NEXT_NP    CHAR(4) INIT('GHNP'),
                                   INSERT              CHAR(4) INIT('ISRT'),
                                   DELETE              CHAR(4) INIT('DLET'),
                                   REPLACE             CHAR(4) INIT('REPL'),
                                   THREE FIXED BINARY(31) INIT(3),
                                   FOUR  FIXED BINARY(31) INIT(4),
                                   FIVE  FIXED BINARY(31) INIT(5)) STATIC;


                          /***********************/
                          /* COURSE SEGMENT SSA */
                          /***********************/
```

```
STMT LEVEL NEST

  5    1              DECLARE                                                             594
                        1 SSA1 STATIC,                                                    595
                          2 SEGMENT CHAR(8) INIT('COURSE  '),                             596
                          2 LP CHAR(1) INIT('('),                                         597
                          2 FIELD CHAR(8) INIT('CRSNO   '),                               598
                          2 RO CHAR(2) INIT(' ='),                                        599
                          2 KEY CHAR(4),                                                  600
                          2 RP CHAR(1) INIT(')'),                                         601
                        1 SSA2 STATIC,                                                    602
                           2 SEGMENT CHAR(8),                                             603
                           2 LP CHAR(1) INIT('('),                                        604
                           2 FIELD CHAR(8),                                               605
                           2 RO CHAR(2) INIT(' ='),                                       606
                           2 KEY CHAR(8),                                                 607
                           2 RP CHAR(1) INIT(')');                                        608
  6    1              DECLARE                                                               4
                        SYSIN FILE RECORD SEQUENTIAL INPUT,                                 5
                        G2KEY FIXED DEC(3,0) DEF SSA2.KEY,                                  6
                        ABEND ENTRY(FIXED BIN(31)),                                         7
                        (CARD CHAR(80),                                                     8
                        AUX CHAR(240),                                                      9
                        (RCODE,SEGMT,TRANS,                                                10
                         GOODUPT INIT(0),                                                  11
                         DLIERR INIT(1)) FIXED BIN(16)) STATIC,                            12
                        G(7,4) LABEL,                                                      13
                        TYP  CHAR(4) DEF CARD POS(15),                                     14
                        SEQ  CHAR(1) DEF CARD POS(18),                                     15
                        UVNO CHAR(4) DEF CARD POS(11),                                     16
                        STYP CHAR(2) DEF CARD POS(15),                                     17
                        TTYP CHAR(1) DEF CARD POS(17),                                     18
                        ZAP FIXED BIN(16);                                                 19
                      /* CARD FIELD DEFINITIONS */                                         20
  7    1              DECLARE                                                              21
                          F01 CHAR(10) DEF CARD POS(01),                                   22
                          F02 CHAR(60) DEF CARD POS(19),                                   23
                          F03 CHAR(06) DEF CARD POS(19),                                   24
                          F04 CHAR(03) DEF CARD POS(25),                                   25
                          F05 CHAR(03) DEF CARD POS(28),                                   26
                          F06 CHAR(03) DEF CARD POS(31),                                   27
                          F07 CHAR(03) DEF CARD POS(34),                                   28
                          F08 CHAR(01) DEF CARD POS(37),                                   29
                          F09 CHAR(03) DEF CARD POS(38),                                   30
                          F10A CHAR(3) DEF CARD POS(41),                                   31
                          F10B CHAR(3) DEF CARD POS(44),                                   32
                          F11 CHAR(03) DEF CARD POS(47),                                   33
                          F12 CHAR(03) DEF CARD POS(50),                                   34
                          F13 CHAR(03) DEF CARD POS(53),                                   35
                          F14 CHAR(03) DEF CARD POS(56),                                   36
                          F15 CHAR(04) DEF CARD POS(59),                                   37
                          F16 CHAR(03) DEF CARD POS(63),                                   38
                          F17 CHAR(04) DEF CARD POS(66),                                   39
                          F18 CHAR(05) DEF CARD POS(19),                                   40
                          F19 CHAR(05) DEF CARD POS(24),                                   41
                          F20 CHAR(05) DEF CARD POS(29),                                   42
                          F21 CHAR(05) DEF CARD POS(34),                                   43
```

```
                  /* COURSE FILE UPDATE PROGRAM */                                                PAGE     6

STMT LEVEL NEST

                                  F22 CHAR(05) DEF CARD POS(39),
                                  F23 CHAR(03) DEF CARD POS(19),
                                  F24 CHAR(03) DEF CARD POS(22),
                                  F25 CHAR(05) DEF CARD POS(25),
                                  F26 CHAR(01) DEF CARD POS(30),
                                  F27 CHAR(03) DEF CARD POS(31),
                                  F28 CHAR(03) DEF CARD POS(27),
                                  F29 CHAR(01) DEF CARD POS(30),
                                  F30 CHAR(05) DEF CARD POS(31),
                                  F31 CHAR(05) DEF CARD POS(36),
                                  F32 CHAR(05) DEF CARD POS(22),
                                  F33 CHAR(05) DEF CARD POS(22),
                                  F34 CHAR(15) DEF CARD POS(22),
                                  F35 CHAR(03) DEF CARD POS(37),
                                  F36 CHAR(03) DEF CARD POS(41);

   8     1                     ON ENDFILE(SYSIN) STOP;
  10     1                     ON CONVERSION BEGIN;
  12     2                        PUT FILE(SYSPRINT) SKIP EDIT
                                     ('INVALID DATA ITEM - "',ONCHAR,'" IS INVALID')(A);
  13     2                        GO TO EC;
  14     2                        END;
  15     1                     ON ERROR SNAP BEGIN;
  17     2                        ON ERROR CALL ABEND(1000);
  19     2                        PUT FILE(SYSPRINT) PAGE DATA;
  20     2                        SIGNAL FINISH;
  21     2                        END;

  22     1             MAIN:   READ FILE(SYSIN) INTO(CARD);
  23     1                     PUT FILE(SYSPRINT) SKIP(3) EDIT(CARD)(A);
                               /* DETERMINE SEGMENT TO BE MODIFIED,
                                  AND WHETHER TRANSACTION IS TO BE
                                  A DELETE, REPLACE OR ADD. */

  24     1                     BEGIN;
  25     2                        DECLARE INDEX BUILTIN;
  26     2                        SEGMT=INDEX('CRINRARERMSTXP',STYP);
  27     2                        TRANS=INDEX('ADRC',TTYP);
  28     2                        END;
  29     1                     IF TRANS=0 | SEGMT=0 | MOD(SEGMT,2)¬=1
  30     1                        THEN PUT FILE(SYSPRINT) SKIP EDIT
                                  ('INVALID CARD CODE - TRANSACTION REJECTED')(A);
  31     1                     ELSE DO;
  32     1     1                  SSA1.KEY=OVNO;
  33     1     1                  GO TO G((SEGMT+1)/2,TRANS);
  34     1     1       G(1,1): /* COURSE SEGMENT ADD */
  35     1     1               IF SEQ¬='1' THEN GO TO G11A;
  36     1     1               SUBSTR(AUX,1,80)=CARD;
  37     1     1               READ FILE(SYSIN) INTO(CARD);
  38     1     1               PUT FILE(SYSPRINT) SKIP EDIT(CARD)(A);
  39     1     1               IF TYP¬='CRA2' | OVNO¬=SSA1.KEY THEN GO TO G11A;
  41     1     1               SUBSTR(AUX,81,80)=CARD;
  42     1     1               READ FILE(SYSIN) INTO(CARD);
  43     1     1               PUT FILE(SYSPRINT) SKIP EDIT(CARD)(A);
  44     1     1               IF TYP¬='CRA3' | OVNO¬=SSA1.KEY THEN GO TO G11A;
```

```
                /* COURSE FILE UPDATE PROGRAM */                                              PAGE    7

STMT LEVEL NEST

                         SUBSTR(AUX,161,80)=CARD;
 46     1    1           GET STRING(AUX) EDIT(COURSE)(A(10),A(4),X(4),A(60),X(20),
 47     1    1              A(6),(2)F(3,1),(2)F(3),F(1),(6)F(3),F(3,1),
                            A(4),F(3),A(4),X(29),(2)F(5),(3)F(5,1));
 48     1    1           CALL PLITDLI(FOUR,INSERT,CRSEPCB,COURSE,'COURSE   ');
 49     1    1           IF STATCD='  ' THEN RCODE=GOODUPT;
 51     1    1              ELSE RCODE=DLIERR;
 52     1    1           GO TO EC;
 53     1    1  G11A:    PUT FILE(SYSPRINT) SKIP EDIT
                            ('SEQUENCING ERROR - TRANSACTION REJECTED')(A);
 54     1    1           GO TO EC;
                G(1,2):  /* COURSE SEGMENT DELETE */
 55     1    1           CALL PLITDLI(FOUR,GET_HOLD_UNIQUE,CRSEPCB,COURSE,SSA1);
 56     1    1           IF STATCD='  ' THEN DO;
 58     1    2              CALL PLITDLI(THREE,DELETE,CRSEPCB,COURSE);
 59     1    2           IF STATCD='  ' THEN RCODE=GOODUPT;
 61     1    2              ELSE RCODE=DLIERR;
 62     1    2              END;
 63     1    1           ELSE RCODE=DLIERR;
 64     1    1           GO TO EC;
                G(1,3):  /* COURSE SEGMENT REPLACE */
 65     1    1           CALL PLITDLI(FOUR,GET_HOLD_UNIQUE,CRSEPCB,COURSE,SSA1);
 66     1    1           IF STATCD='  ' THEN DO;
 68     1    2              IF SEQ='1' THEN GET STRING(CARD) EDIT
                               (CRSNAME)(X(18),A(60));
 70     1    2              ELSE IF SEQ='2' THEN GET STRING(CARD) EDIT
                                 (DEPT,LENGTH,QUALTIME,BUPCAP,INSTCAP,CRSTYPE,MINCON,
                                  CHNGDATE,OFFSET,NBUPCAP,NINSTCAP,NMINCON,NLENGTH,
                                  NECAWARD,WAIT,JNO)
                                 (X(18),A(6),(2)F(3,1),(2)F(3),F(1),(3)F(3),
                                  (3)F(3),F(3,1),A(4),F(3),A(4));
 72     1    2              ELSF IF SEQ='3' THEN GET STRING(CARD) EDIT
                                 (TPF1,TPF2)(X(18),(2)F(5).(3)F(5,1));
 74     1    2              ELSE DO;
 75     1    3                 PUT FILE(SYSPRINT) SKIP EDIT
                               ('INVALID CARD CODE - TRANSACTION REJECTED')(A);
 76     1    3                 GO TO MAIN;
 77     1    3                 END;
 78     1    2              CALL PLITDLI(THREE,REPLACE,CRSEPCB,COURSE);
 79     1    2           IF STATCD='  ' THEN RCODE=GOODUPT;
 81     1    2              ELSE RCODE=DLIERR;
 82     1    2              END;
 83     1    1           ELSE RCODE=DLIERR;
 84     1    1           GO TO EC;
                G(1,4):  /* COURSE SEGMENT CHANGE */
 85     1    1           CALL CONVERT(CARD);
 86     1    1           CALL PLITDLI(FOUR,GET_HOLD_UNIQUE,CRSEPCB,COURSE,SSA1);
 87     1    1           IF STATCD='  ' THEN DO;
 89     1    2              IF SEQ='1' THEN DO;
 91     1    3                 CALL CCHECK(F01,PREFIX);
 92     1    3                 CALL CCHECK(F02,CRSNAME);
 93     1    3                 END;
 94     1    2              ELSE IF SEQ='2' THEN DO;
 96     1    3                 CALL CCHECK(F03,DEPT);
 97     1    3                 CALL FCHECK(F04,LENGTH);
```

```
                  /* COURSE FILE UPDATE PROGRAM */                                                              PAGE     8

STMT LEVEL NEST

  98      1    3                    CALL FCHECK(F05,QUALTIME);
  99      1    3                    CALL FCHECK(F06,BUPCAP);
 100      1    3                    CALL FCHECK(F07,INSTCAP);
 101      1    3                    CALL FCHECK(F08,CRSTYPE);
 102      1    3                    CALL FCHECK(F09,MINCON);
 103      1    3                    CALL FCHECK(F10A,CHNGDATE);
 104      1    3                    CALL FCHECK(F10B,OFFSET);
 105      1    3                    CALL FCHECK(F11,NBUPCAP);
 106      1    3                    CALL FCHECK(F12,NINSTCAP);
 107      1    3                    CALL FCHECK(F13,NMINCON);
 108      1    3                    CALL FCHECK(F14,NLENGTH);
 109      1    3                    CALL CCHECK(F15,NECAWARD);
 110      1    3                    CALL FCHECK(F16,WAIT);
 111      1    3                    CALL CCHECK(F17,JNO);
 112      1    3                    END;
 113      1    2                 ELSE IF SEQ='3' THEN DO;
 115      1    3                    CALL FCHECK(F18,TPF1(1));
 116      1    3                    CALL FCHECK(F19,TPF1(2));
 117      1    3                    CALL FCHECK(F20,TPF2(1));
 118      1    3                    CALL FCHECK(F21,TPF2(2));
 119      1    3                    CALL FCHECK(F22,TPF2(3));
 120      1    3                    END;
 121      1    2                 ELSE DO;
 122      1    3                    PUT FILE(SYSPRINT) SKIP EDIT
                                    ('INVALID CARD CODE - TRANSACTION REJECTED')(A);
 123      1    3                    GO TO MAIN;
 124      1    3                    END;
 125      1    2                 CALL PLITDLI(THREE,REPLACE,CRSEPCB,COURSE);
 126      1    2                 IF STATCD='  ' THEN RCODE=GOODUPT;
 128      1    2                    ELSE RCODE=DLIERR;
 129      1    2                 END;
 130      1    1              ELSE RCODE=DLIERR;
 131      1    1              GO TO EC;
 132      1    1    G(2,1):   /* INSTRUCTOR SEGMENT ADD */
                              GET STRING(CARD) EDIT(INST)
                                 (X(18),F(3),A(15),F(3),B(1),F(3));
 133      1    1              CALL PLITDLI(FIVE,INSERT,CRSEPCB,INST,SSA1,'INST      ');
 134      1    1              IF STATCD='  ' THEN RCODE=GOODUPT;
 136      1    1                 ELSE RCODE=DLIERR;
 137      1    1              GO TO EC;
 138      1    1    G(2,2):   /* INSTRUCTOR SEGMENT DELETE */
                              GET STRING(CARD) EDIT(G2KEY)(X(18),F(3));
 139      1    1              SSA2.SEGMENT='INST    ';
 140      1    1              SSA2.FIELD='INSTNO  ';
 141      1    1              SUBSTR(SSA2.KEY,3,1)=')';
 142      1    1              CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,INST,SSA1,SSA2);
 143      1    1              IF STATCD='  ' THEN DO;
 145      1    2                 CALL PLITDLI(THREE,DELETE,CRSEPCB,INST);
 146      1    2              IF STATCD='  ' THEN RCODE=GOODUPT;
 148      1    2                 ELSE RCODE=DLIERR;
 149      1    2                 END;
 150      1    1              ELSE RCODE=DLIERR;
 151      1    1              GO TO EC;
 152      1    1    G(2,3):   /* INSTRUCTOR SEGMENT REPLACE */
                              GET STRING(CARD) EDIT(G2KEY)(X(18),F(3));
```

```
STMT LEVEL NEST

153    1    1              SSA2.SEGMENT='INST    ';
154    1    1              SSA2.FIELD='INSTNO  ';
155    1    1              SUBSTR(SSA2.KEY,3,1)=')';
156    1    1              CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,INST,SSA1,SSA2);
157    1    1              IF STATCD='  ' THEN DO;
159    1    2                 GET STRING(CARD) EDIT(INST)
                                 (X(18),F(3),A(15),F(3),B(1),F(3));
160    1    2                 CALL PLITDLI(THREE,REPLACE,CRSEPCB,INST);
161    1    2              IF STATCD='  ' THEN RCODE=GOODUPT;
163    1    2                 ELSE RCODE=DLIERR;
164    1    2                 END;
165    1    1              ELSE RCODE=DLIERR;
166    1    1              GO TO EC;
167    1    1     G(2,4):  /* INSTRUCTOR SEGMENT CHANGE */
                           SSA2.SEGMENT='INST    ';
168    1    1              SSA2.FIELD='INSTNO  ';
169    1    1              SUBSTR(SSA2.KEY,3,1)=')';
170    1    1              CALL CONVERT(CARD);
171    1    1              CALL FCHECK(F23,G2KEY);
172    1    1              CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,INST,SSA1,SSA2);
173    1    1              IF STATCD='  ' THEN DO;
175    1    2                 CALL CCHECK(F34,INSTNAME);
176    1    2                 CALL FCHECK(F35,PERQUAL);
177    1    2                 CALL FCHECK(F36,INGRP);
178    1    2                 IF SUBSTR(CARD,40,1)¬=' ' THEN
179    1    2                    GET STRING(CARD) EDIT(CURR)(X(39),B(1));
180    1    2                 CALL PLITDLI(THREE,REPLACE,CRSEPCB,INST);
181    1    2                 IF STATCD='  ' THEN RCODE=GOODUPT;
183    1    2                    ELSE RCODE=DLIERR;
184    1    2                 END;
185    1    1              ELSE RCODE=DLIERR;
186    1    1              GO TO EC;
187    1    1     G(3,1):  /* RATIOS SEGMENT ADD */
                           GET STRING(CARD) EDIT(RATIO,NUMINST,CONTHRS,RATIOS.TYPE,
                              RATGRP)(X(18),F(3,1),F(3),F(5,1),F(1),F(3));
188    1    1              STATCD='II';
189    1    1              DO INDEX=1 BY 1 WHILE(STATCD='II');
190    1    2                 CALL PLITDLI(FIVE,INSERT,CRSEPCB,RATIOS,SSA1,'RATIOS   ');
191    1    2                 END;
192    1    1              IF STATCD='  ' THEN RCODE=GOODUPT;
194    1    1                 ELSE RCODE=DLIERR;
195    1    1              GO TO EC;
196    1    1     G(3,2):  /* RATIOS SEGMENT DELETE */
                           GET STRING(CARD) EDIT(G2KEY)(X(18),F(3));
197    1    1              SSA2.SEGMENT='RATIOS  ';
198    1    1              SSA2.FIELD='INDEX   ';
199    1    1              SUBSTR(SSA2.KEY,3,1)=')';
200    1    1              CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,RATIOS,SSA1,SSA2);
201    1    1              IF STATCD='  ' THEN DO;
203    1    2                 CALL PLITDLI(THREE,DELETE,CRSEPCB,RATIOS);
204    1    2              IF STATCD='  ' THEN RCODE=GOODUPT;
206    1    2                 ELSE RCODE=DLIERR;
207    1    2                 END;
208    1    1              ELSE RCODE=DLIERR;
209    1    1              GO TO EC;
```

```
                /* COURSE FILE UPDATE PROGRAM */                                                 PAGE    10

STMT LEVEL NEST

210     1    1    G(3,3):  /* RATIOS SEGMENT REPLACE */                                      263
                           GET STRING(CARD) EDIT(G2KEY)(X(18),F(3));                         264
211     1    1             SSA2.SEGMENT='RATIOS  ';                                          265
212     1    1             SSA2.FIELD='INDEX    ';                                           266
213     1    1             SUBSTR(SSA2.KEY,3,1)='1';                                         267
214     1    1             CALL PLITOLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,RATIOS,SSA1,SSA2);      268
215     1    1             IF STATCD='  ' THEN DO:                                           269
217     1    2                GET STRING(CARD) EDIT(RATIOS)                                  270
                                 (X(18),F(3),F(3,1),F(3),F(5,1),F(1),F(3));                  271
218     1    2                CALL PLITOLI(THREE,REPLACE,CRSEPCB,RATIOS);                    272
219     1    2             IF STATCD='  ' THEN RCODE=GOODUPT;                                273
221     1    2                ELSE RCODE=DLIERR;                                             274
222     1    2                END;                                                           275
223     1    1             ELSE RCODE=DLIERR;                                                276
224     1    1             GO TO EC;                                                         277
225     1    1    G(3,4):  /* RATIOS SEGMENT CHANGE */                                       278
                           SSA2.SEGMENT='RATIOS  ';                                          279
226     1    1             SSA2.FIELD='INDEX    ';                                           280
227     1    1             SUBSTR(SSA2.KEY,3,1)='1';                                         281
228     1    1             CALL CONVERT(CARD);                                               282
229     1    1             CALL FCHECK(SUBSTR(CARD,34,3),G2KEY);                             283
230     1    1             CALL PLITOLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,RATIOS,SSA1,SSA2);      284
231     1    1             IF STATCD='  ' THEN DO;                                           285
233     1    2                CALL FCHECK(F23,RATIO);                                        286
234     1    2                CALL FCHECK(F24,NUMINST);                                      287
235     1    2                CALL FCHECK(F25,CONTHRS);                                      288
236     1    2                CALL FCHECK(F26,RATIOS.TYPE);                                  289
237     1    2                CALL FCHECK(F27,RATGRP);                                       290
238     1    2                CALL PLITOLI(THREE,REPLACE,CRSEPCB,RATIOS);                    291
239     1    2                IF STATCD='  ' THEN RCODE=GOODUPT;                             292
241     1    2                   ELSE RCODE=DLIERR;                                          293
242     1    2                END;                                                           294
243     1    1             ELSE RCODE=DLIERR;                                                295
244     1    1             GO TO EC;                                                         296
245     1    1    G(4,1):  /* RELATED COURSE SEGMENT ADD */                                  297
                           REL=SUBSTR(CARD,19,4);                                            298
246     1    1             RELGRP=SUBSTR(CARD,24,2);                                         299
247     1    1             CALL PLITOLI(FIVE,INSERT,CRSEPCB,RELCRS,SSA1,'RELCRS   ');         300
248     1    1             IF STATCD='  ' THEN RCODE=GOODUPT;                                301
250     1    1                ELSE RCODE=DLIERR;                                             302
251     1    1             GO TO EC;                                                         303
252     1    1    G(4,2):  /* RELATED COURSE SEGMENT DELETE */                               304
                           SUBSTR(SSA2.KEY,7,2)='1 ';                                        305
253     1    1             REL=SUBSTR(CARD,19,4);                                            306
254     1    1             RELGRP=SUBSTR(CARD,24,2);                                         307
255     1    1             SSA2.SEGMENT='RELCRS  ';                                          308
256     1    1             SSA2.FIELD='RELKEY  ';                                            309
257     1    1             SUBSTR(SSA2.KEY,1,6)=STRING(RELCRS);                              310
258     1    1             CALL PLITOLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,RELCRS,SSA1,SSA2);      311
259     1    1             IF STATCD='  ' THEN DO;                                           312
261     1    2                CALL PLITOLI(THREE,DELETE,CRSEPCB,RELCRS);                     313
262     1    2             IF STATCD='  ' THEN RCODE=GOODUPT;                                314
264     1    2                ELSE RCODE=DLIERR;                                             315
265     1    2                END;                                                           316
266     1    1             ELSE RCODE=DLIERR;                                                317
```

```
                  /* COURSE FILE UPDATE PROGRAM */                                                PAGE    11

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267     1     1             GO TO EC;                                                        318
268     1     1   G(4,3):   /* RELATED COURSE SEGMENT REPLACE */                             319
                            /* BECAUSE THE RELATED COURSE SEGMENT                            320
                               CONSISTS ENTIRELY OF A SINGLE KEY                             320
                               FIELD,REPLACEMENT PER SE IS NOT A                             320
                               VALID REQUEST. TO CHANGE A RELCRS                             320
                               SEGMENT,THE USER MUST ISSUE A DELETE                          320
                               FOLLOW BY AN ADD. */                                          320
                                                                                             325
                            PUT FILE(SYSPRINT) SKIP EDIT                                     326
                               ('REPLACEMENT INVALID FOR RELCRS SEGMENT')(A);                327
269     1     1             GO TO MAIN;                                                      328
270     1     1   G(4,4):   /* RELATED COURSE SEGMENT CHANGE */                              329
                            /* THIS TRANSACTION IS INVALID FOR THE                           330
                               SAME REASONS AS RELATED COURSE REPLACE.                       330
                               ADD AND DELETE MUST BE USED TO ACHIEVE                        330
                               THE DESIRED CHANGES. */                                       330
                                                                                             333
                            PUT FILE(SYSPRINT) SKIP EDIT                                     334
                               ('CHANGE INVALID FOR RELCRS SEGMENT')(A);                     335
271     1     1             GO TO MAIN;                                                      336
272     1     1   G(5,1):   /* ROOM SEGMENT ADD */                                           337
                            GET STRING(CARD) EDIT(CLSRM)(X(18),A(5),A(3),F(3),F(1),          338
                               F(5,1),F(5));                                                 339
273     1     1             CALL PLITDLI(FIVE,INSERT,CRSEPCB,CLSRM,SSA1,'CLSRM    ');        340
274     1     1             IF STATCD='  ' THEN RCODE=GOODUPT;                               341
276     1     1                ELSE RCODE=DLIERR;                                            342
277     1     1             GO TO EC;                                                        343
278     1     1   G(5,2):   /* ROOM SEGMENT DELETE */                                        344
                            SSA2.KEY=SUBSTR(CARD,19,8);                                      345
279     1     1             SSA2.SEGMENT='CLSRM   ';                                         346
280     1     1             SSA2.FIELD='CLASSRM ';                                           347
281     1     1             CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,CLSRM,SSA1,SSA2);      348
282     1     1             IF STATCD='  ' THEN DO;                                          349
284     1     2                CALL PLITDLI(THREE,DELETE,CRSEPCB,CLSRM);                     350
285     1     2             IF STATCD='  ' THEN RCODE=GOODUPT;                               351
287     1     2                ELSE RCODE=DLIERR;                                            352
288     1     2                END;                                                          353
289     1     1             ELSE RCODE=DLIERR;                                               354
290     1     1             GO TO EC;                                                        355
291     1     1   G(5,3):   /* ROOM SEGMENT REPLACE */                                       356
                            SSA2.KEY=SUBSTR(CARD,19,8);                                      357
292     1     1             SSA2.SEGMENT='CLSRM   ';                                         358
293     1     1             SSA2.FIELD='CLASSRM ';                                           359
294     1     1             CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,SSA1,SSA2);            360
295     1     1             IF STATCD='  ' THEN DO;                                          361
297     1     2                GET STRING(CARD) EDIT(CLSRM)(X(18),A(5),A(3),F(3),F(1),       362
                                  F(5,1),F(5));                                              363
298     1     2                CALL PLITDLI(THREE,REPLACE,CRSEPCB,CLSRM);                    364
299     1     2             IF STATCD='  ' THEN RCODE=GOODUPT;                               365
301     1     2                ELSE RCODE=DLIERR;                                            366
302     1     2                END;                                                          367
303     1     1             ELSE RCODE=DLIERR;                                               368
304     1     1             GO TO EC;                                                        369
305     1     1   G(5,4):   /* CLASSROOM SEGMENT CHANGE */                                   370
```

```
                /* COURSE FILE UPDATE PROGRAM */                                          PAGE    12

STMT LEVEL NEST

                            SSA2.SEGMENT='CLSRM    ';
 306      1    1            SSA2.FIELD='CLASSRM ';
 307      1    1            SSA2.KEY=SUBSTR(CARD,19,8);
 308      1    1            CALL CONVERT(CARD);
 309      1    1            CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,CLSRM,SSA1,SSA2);
 310      1    1            IF STATCD='  ' THEN DO;
 312      1    2               CALL FCHECK(F28,RMCAP);
 313      1    2               CALL FCHECK(F29,RMTYPE);
 314      1    2               CALL FCHECK(F30,REQRMS);
 315      1    2               CALL FCHECK(F31,AVAILHRS);
 316      1    2               CALL PLITDLI(THREE,REPLACE,CRSEPCB,CLSRM);
 317      1    2               IF STATCD='  ' THEN RCODE=GOODUPT;
 319      1    2                  ELSE RCODE=DLIERR;
 320      1    2               END;
 321      1    1            ELSE RCODE=DLIERR;
 322      1    1            GO TO EC;
 323      1    1  G(6,1):   /* STUDENT DATA SEGMENT ADD */
                            GET STRING(CARD) EDIT(STDATA)(X(18),F(3),F(5));
 324      1    1            CALL PLITDLI(FIVE,INSERT,CRSEPCB,STDATA,SSA1,'STDATA   ');
 325      1    1            IF STATCD='  ' THEN RCODE=GOODUPT;
 327      1    1               ELSE RCODE=DLIERR;
 328      1    1            GO TO EC;
 329      1    1  G(6,2):   /* STUDENT DATA SEGMENT DELETE */
                            GET STRING(CARD) EDIT(G2KEY)(X(18),F(3));
 330      1    1            SSA2.SEGMENT='STDATA  ';
 331      1    1            SSA2.FIELD='TYPE     ';
 332      1    1            SUBSTR(SSA2.KEY,3,1)=')';
 333      1    1            CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,STDATA,SSA1,SSA2);
 334      1    1            IF STATCD='  ' THEN DO;
 336      1    2               CALL PLITDLI(THREE,DELETE,CRSEPCB,STDATA);
 337      1    2            IF STATCD='  ' THEN RCODE=GOODUPT;
 339      1    2               ELSE RCODE=DLIERR;
 340      1    2               END;
 341      1    1            ELSE RCODE=DLIERR;
 342      1    1            GO TO EC;
 343      1    1  G(6,3):   /* STUDENT DATA SEGMENT REPLACE */
                            SSA2.SEGMENT='STDATA  ';
 344      1    1            SSA2.FIELD='TYPE     ';
 345      1    1            SUBSTR(SSA2.KEY,3,1)=')';
 346      1    1            GET STRING(CARD) EDIT(G2KEY)(X(18),F(3));
 347      1    1            CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,STDATA,SSA1,SSA2);
 348      1    1            IF STATCD='  ' THEN DO;
 350      1    2               GET STRING(CARD) EDIT(STDATA)(X(18),F(3),F(5));
 351      1    2               CALL PLITDLI(THREE,REPLACE,CRSEPCB,STDATA);
 352      1    2            IF STATCD='  ' THEN RCODE=GOODUPT;
 354      1    2               ELSE RCODE=DLIERR;
 355      1    2               END;
 356      1    1            ELSE RCODE=DLIERR;
 357      1    1            GO TO EC;
 358      1    1  G(6,4):   /* STUDENT DATA SEGMENT CHANGE */
                            SSA2.SEGMENT='STDATA  ';
 359      1    1            SSA2.FIELD='TYPE     ';
 360      1    1            SUBSTR(SSA2.KEY,3,1)=')';
 361      1    1            CALL CONVERT(CARD);
 362      1    1            CALL FCHECK(F23,G2KEY);
```

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STMT LEVEL NEST

363     1    1              CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,STDATA,SSA1,SSA2);     426
364     1    1              IF STATCD=' ' THEN DO;                                           427
366     1    2                 CALL FCHECK(F32,STDATA.FACTOR);                               428
367     1    2                 CALL PLITDLI(THREE,REPLACE,CRSEPCB,STDATA);                   429
368     1    2                 IF STATCD=' ' THEN RCODE=GOODUPT;                             430
370     1    2                    ELSE RCODE=DLIERR;                                         431
371     1    2                 END;                                                          432
372     1    1              ELSE RCODE=DLIERR;                                               433
373     1    1              GO TO EC;                                                        434
374     1    1   G(7,1):    /* COMPLEXITY SEGMENT ADD */                                     435
                            GET STRING(CARD) EDIT(CMPLXGRP)(X(10),F(3),F(5));                436
375     1    1              CALL PLITDLI(FIVE,INSERT,CRSEPCB,STDATA,SSA1,'CMPLXGRP ');       437
376     1    1              IF STATCD=' ' THEN RCODE=GOODUPT;                                438
378     1    1                 ELSE RCODE=DLIERR;                                            439
379     1    1              GO TO EC;                                                        440
380     1    1   G(7,2):    /* COMPLEXITY SEGMENT DELETE */                                  441
                            GET STRING(CARD) EDIT(G2KEY)(X(10),F(3));                        442
381     1    1              SSA2.SEGMENT='CMPLXGRP';                                         443
382     1    1              SSA2.FIELD='TYPE     ';                                          444
383     1    1              SUBSTR(SSA2.KEY,3,1)=')';                                        445
384     1    1              CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,CMPLXGRP,SSA1,SSA2);   446
385     1    1              IF STATCD=' ' THEN DO;                                           447
387     1    2                 CALL PLITDLI(THREE,DELETE,CRSEPCB,CMPLXGRP);                  448
388     1    2              IF STATCD=' ' THEN RCODE=GOODUPT;                                449
390     1    2                 ELSE RCODE=DLIERR;                                            450
391     1    2                 END;                                                          451
392     1    1              ELSE RCODE=DLIERR;                                               452
393     1    1              GO TO EC;                                                        453
394     1    1   G(7,3):    /* COMPLEXITY SEGMENY REPLACE */                                 454
                            SSA2.SEGMENT='CMPLXGRP';                                         455
395     1    1              SSA2.FIELD='TYPE     ';                                          456
396     1    1              SUBSTR(SSA2.KEY,3,1)=')';                                        457
397     1    1              GET STRING(CARD) EDIT(G2KEY)(X(10),F(3));                        458
398     1    1              CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,CMPLXGRP,SSA1,SSA2);   459
399     1    1              IF STATCD=' ' THEN DO;                                           460
401     1    2                 GET STRING(CARD) EDIT(CMPLXGRP)(X(10),F(3),F(5));             461
402     1    2                 CALL PLITDLI(THREE,REPLACE,CRSEPCB,CMPLXGRP);                 462
403     1    2              IF STATCD=' ' THEN RCODE=GOODUPT;                                463
405     1    2                 ELSE RCODE=DLIERR;                                            464
406     1    2                 END;                                                          465
407     1    1              ELSE RCODE=DLIERR;                                               466
408     1    1              GO TO EC;                                                        467
409     1    1   G(7,4):    /* COURSE COMPLEXITY SEGMENT CHANGE */                           468
                            SSA2.SEGMENT='CMPLXGRP';                                         469
410     1    1              SSA2.FIELD='TYPE     ';                                          470
411     1    1              SUBSTR(SSA2.KEY,3,1)=')';                                        471
412     1    1              CALL CONVERT(CARD);                                              472
413     1    1              CALL FCHECK(F23,G2KEY);                                          473
414     1    1              CALL PLITDLI(FIVE,GET_HOLD_UNIQUE,CRSEPCB,CMPLXGRP,SSA1,SSA2);   474
415     1    1              IF STATCD=' ' THEN DO;                                           475
417     1    2                 CALL FCHECK(F33,CMPLXGRP.FACTOR);                             476
418     1    2                 CALL PLITDLI(THREE,REPLACE,CRSEPCB,CMPLXGRP);                 477
419     1    2                 IF STATCD=' ' THEN RCODE=GOODUPT;                             478
421     1    2                    ELSE RCODE=DLIERR;                                         479
422     1    2                 END;                                                          480
```

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STMT LEVEL NEST

423     1     1            ELSE RCODE=DLIERR;                                                  481
424     1     1    EC:     IF RCODE=GOODUPT THEN PUT FILE(SYSPRINT) SKIP EDIT                  482
                              ('ABOVE ACTION SUCCESSFULLY COMPLETED')(A);                      483
426     1     1            ELSE IF RCODE=DLIERR THEN PUT FILE(SYSPRINT) SKIP EDIT              484
                              ('DATA BASE ERROR - ERR CODE=',STATCD)(A);                       485
428     1     1            ELSE SIGNAL ERROR;                                                  486
429     1     1            END;                                                                487
430     1                  GO TO MAIN;                                                         488
431     1                  END DLITPLI;                                                        489
```

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CHART TITLE - PROCEDURE DLITPLI (CASEPCG) OPTIONS (MAIN)

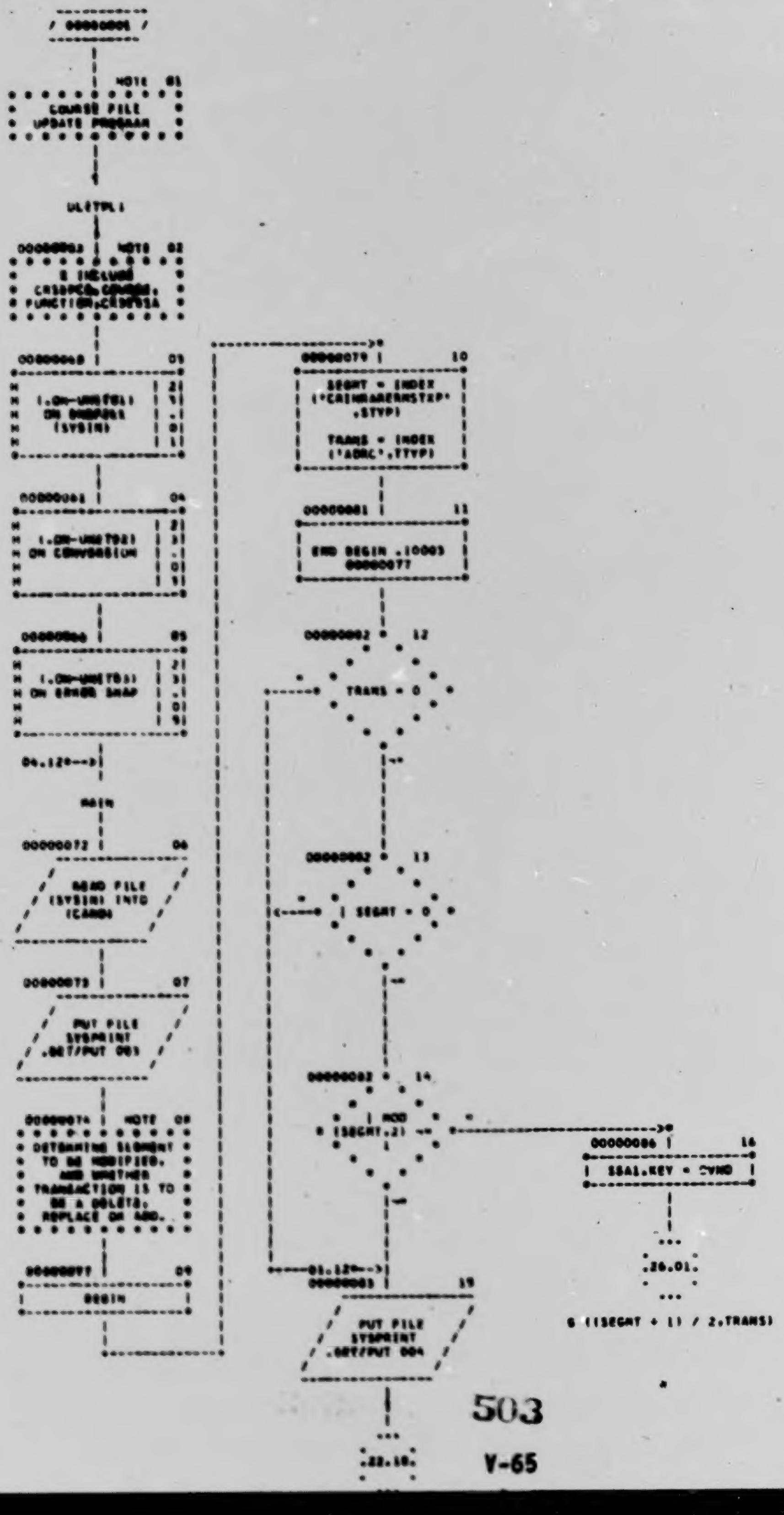
00000001
NOTE 01
COURSE FILE UPDATE PROGRAM
DLITPLI
00000063 NOTE 02
% INCLUDE CASEPCG,COMMON, FUNCTION,CASESSA
00000068 03
(.ON-UNIT01) ON ENDFILE (SYSIN)
2 1 . 0 1
00000061 04
(.ON-UNIT02) ON CONVERSION
2 1 . 0 1
00000066 05
(.ON-UNIT03) ON ERROR SNAP
2 1 . 0 1
04.12*-->
MAIN
00000072 06
READ FILE (SYSIN) INTO (CARD)
00000073 07
PUT FILE SYSPRINT .GET/PUT 003
00000074 NOTE 08
DETERMINE ELEMENT TO BE MODIFIED, AND WHETHER TRANSACTION IS TO BE A DELETE, REPLACE OR ADD.
00000077 09
BEGIN
00000079 10
SEGMT = INDEX ('CAIMNRABERNSTXP' ,STYP)
TRANS = INDEX ('ADRC',TTYP)
00000081 11
END BEGIN .10003 00000077
00000082 12
TRANS = 0
00000082 13
SEGMT = 0
00000082 14
MOD (SEGMT,2)
01.12*-->
00000083 15
PUT FILE SYSPRINT .GET/PUT 004
22.10.
00000086 16
SSA1.KEY = CVNO
26.01.
G ((SEGMT + 1) / 2,TRANS)

CHART TITLE - PROCEDURE DLITPLI (CASEPCB) OPTIONS (MAIN)

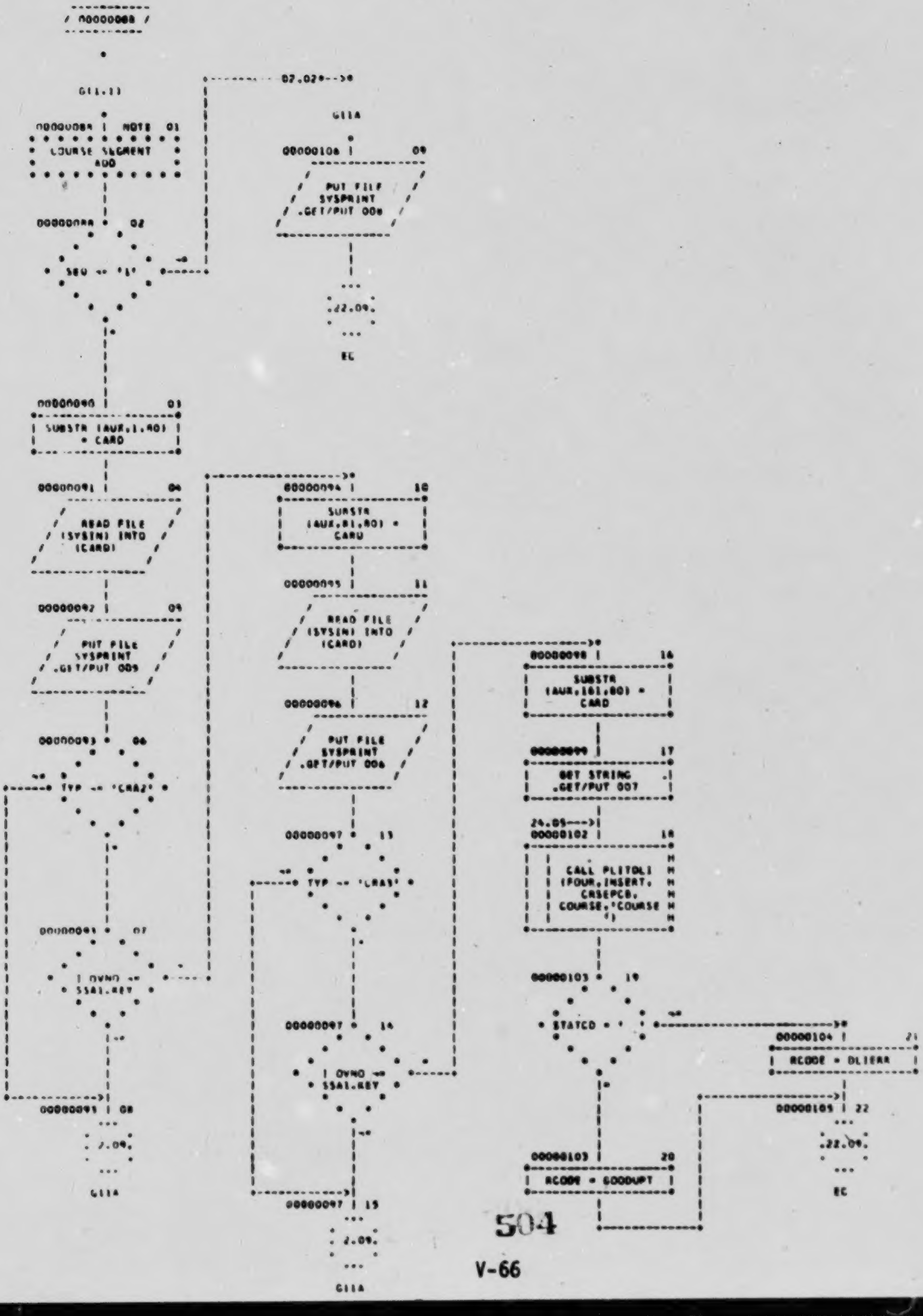
00000088
G11.11
00000089 NOTE 01
COURSE SEGMENT ADD
00000088 02
SEQ -= '1'
07.02
G11A
00000106 09
PUT FILE SYSPRINT .GET/PUT 008
22.09.
EC
00000090 03
SUBSTR (AUX,1,80) = CARD
00000091 04
READ FILE (SYSIN) INTO (CARD)
00000092 05
PUT FILE SYSPRINT .GET/PUT 005
00000093 06
TYP -= 'CRA2'
00000093 07
OVNO -= SSA1.KEY
00000093 08
2.09.
G11A
00000094 10
SUBSTR (AUX,81,80) = CARD
00000095 11
READ FILE (SYSIN) INTO (CARD)
00000096 12
PUT FILE SYSPRINT .GET/PUT 006
00000097 13
TYP -= 'CRA3'
00000097 14
OVNO -= SSA1.KEY
00000097 15
2.09.
G11A
00000098 16
SUBSTR (AUX,161,80) = CARD
00000099 17
GET STRING .GET/PUT 007
24.05
00000102 18
CALL PLITDLI (FOUR,INSERT, CASEPCB, COURSE,'COURSE ')
00000103 19
STATCD = ' '
00000104 21
RCODE = DLIERR
00000105 22
22.09.
EC
00000103 20
RCODE = GOODUPT

CHART TITLE - PROCEDURE DLITPLI (CRSEPCB) OPTIONS (MAIN)

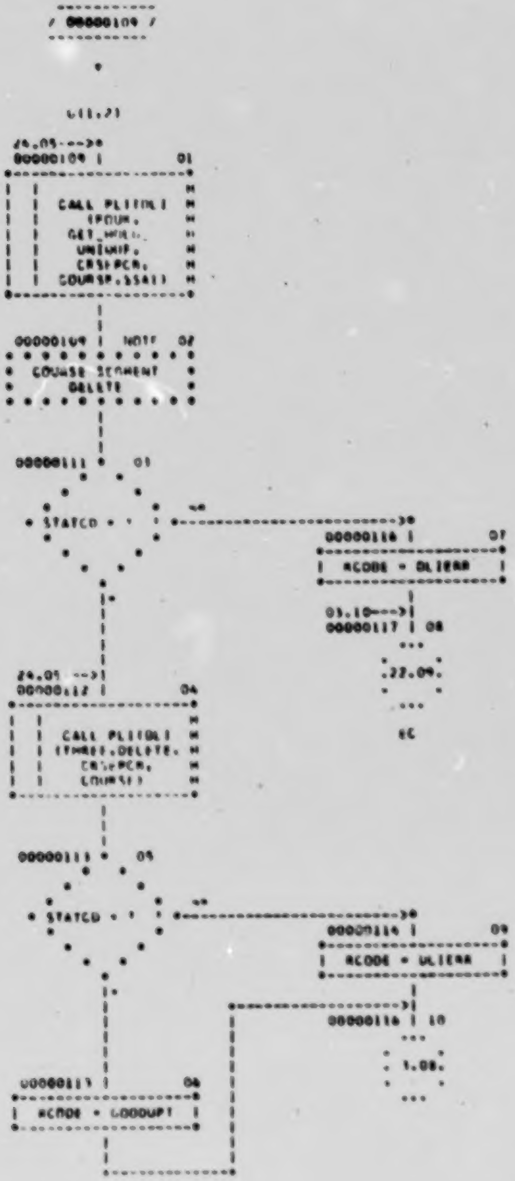
/ 00000109 /
U(1,2)
24.05 --->
00000109 01
CALL PLITDLI
(FOUR,
GET_HOLD_
UNIQUE,
CRSEPCB,
COURSE.SSA1)
00000109 NOTE 02
COURSE SEGMENT
DELETE
00000111 03
STATCD = ' '
NE
00000116 07
RCODE = DLIERR
03.10 --->
00000117 08
22.09
EC
24.05 --->
00000112 04
CALL PLITDLI
(THREE,DELETE,
CRSEPCB,
COURSE)
00000113 05
STATCD = ' '
NE
00000114 09
RCODE = DLIERR
00000116 10
1.08
00000115 06
RCODE = GOODUPT

CHART TITLE - PROCEDURE DLITPLI (CRSEPCB) OPTIONS (MAIN)

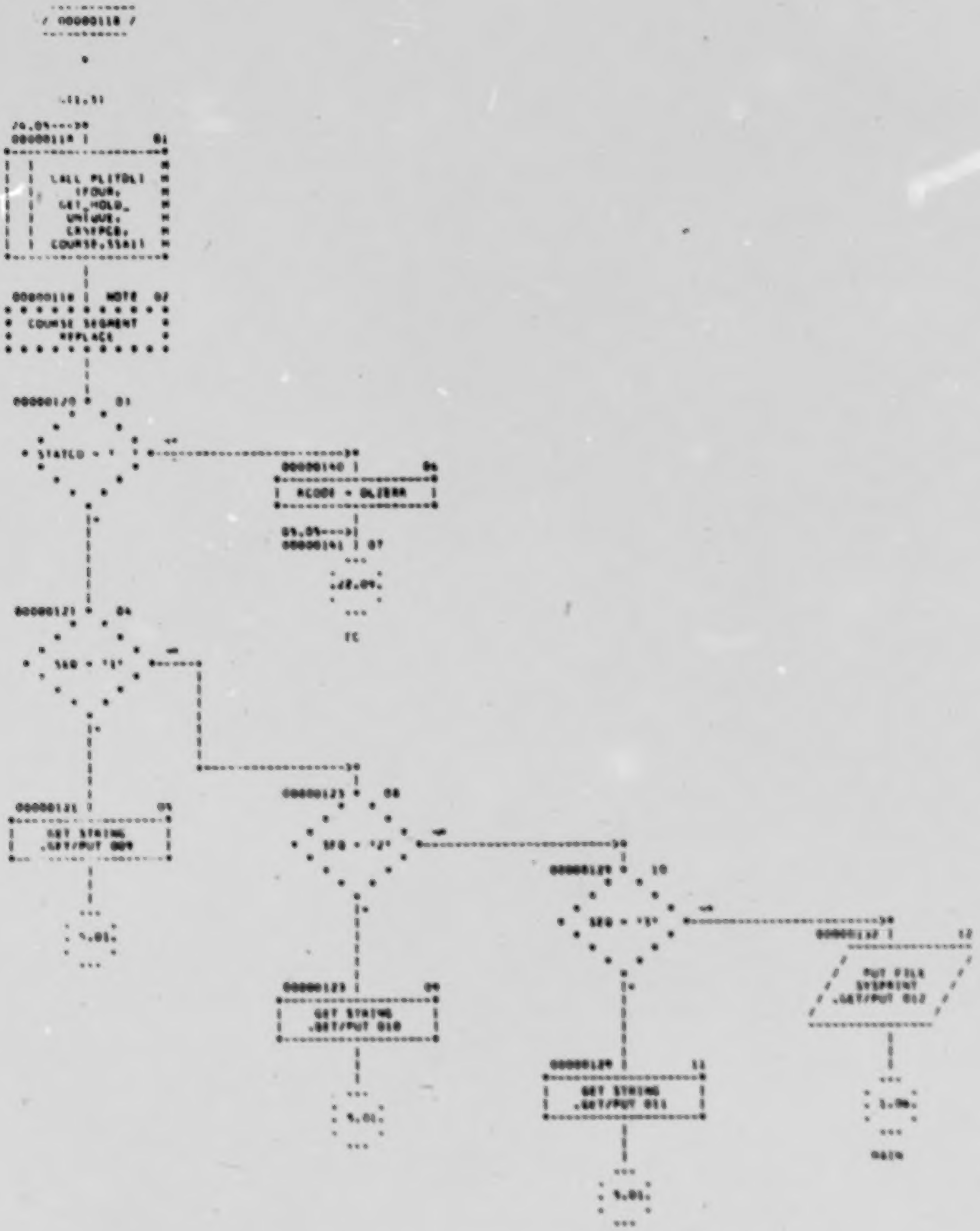
/ 00000118 /
.11.31
/4.05---->
00000119 01
CALL PLITDLI (FOUR, GET_HOLD_ UNIQUE, CRSEPCB, COURSE, SSA1)
00000119 NOTE 02
COURSE SEGMENT REPLACE
00000120 03
STATCD = ' '
<>
00000140 06
RCODE = DLIERR
05.05---->
00000141 07
22.09.
TC
00000121 04
SEQ = '1'
=
00000121 05
GET STRING .GET/PUT 009
5.01.
00000123 08
SEQ = '2'
=
00000123 09
GET STRING .GET/PUT 010
5.01.
00000129 10
SEQ = '3'
=
00000129 11
GET STRING .GET/PUT 011
5.01.
00000132 12
PUT FILE SYSPRINT .GET/PUT 012
1.06.
MAIN

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CHART TITLE - PROCEDURE DLITPLI (CRSEPCB) OPTIONS (MAIN)

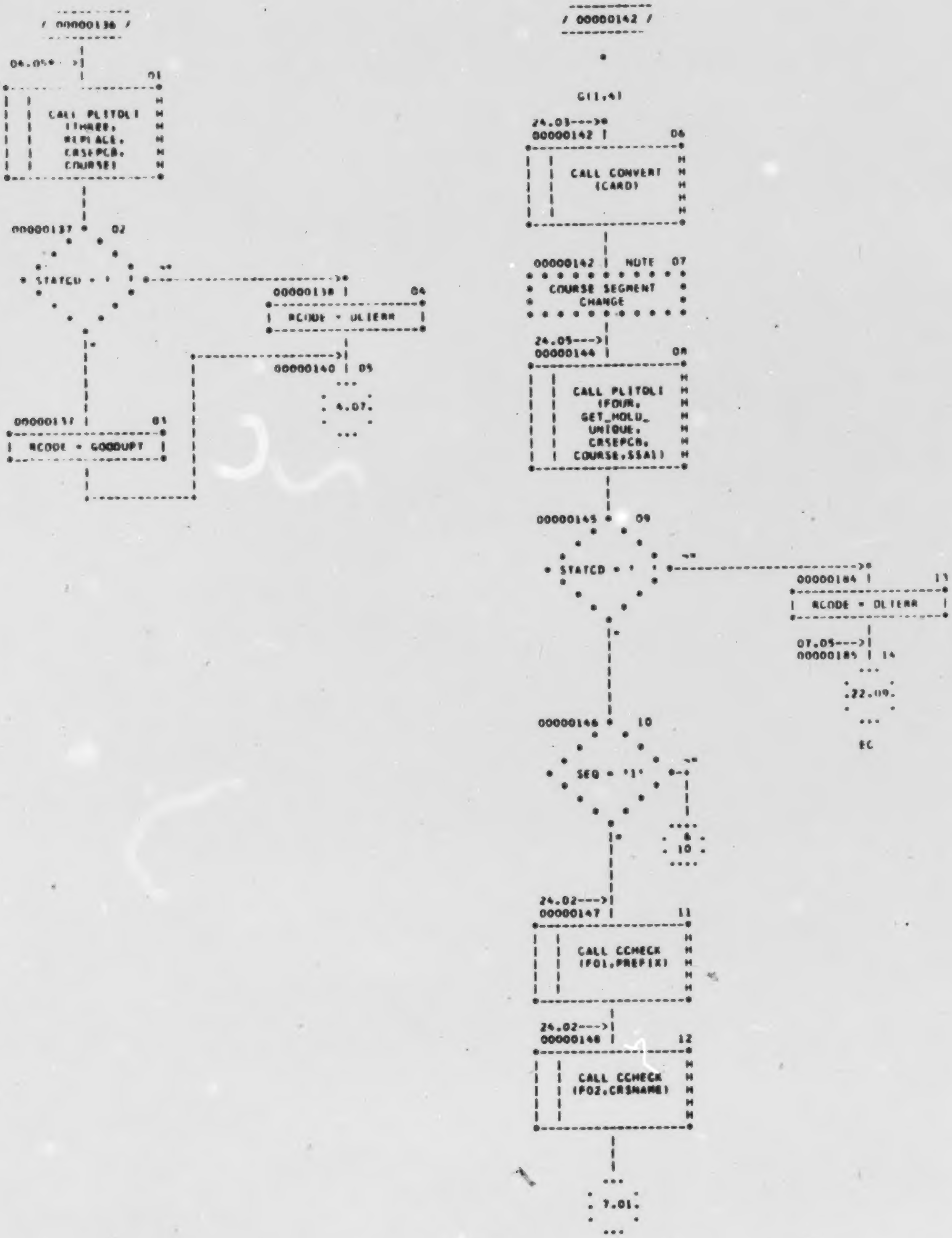
/ 00000136 /
04.05*->
01
CALL PLITDLI (THREE, REPLACE, CRSEPCB, COURSE)
00000137 02
STATCD = ' '
-*
00000138 04
RCODE = DLIERR
*
00000140 05
4.07.
00000137 03
RCODE = GOODUPT
/ 00000142 /
G(1,4)
24.03--->
00000142 06
CALL CONVERT (CARD)
00000142 NOTE 07
COURSE SEGMENT CHANGE
24.05--->
00000144 08
CALL PLITDLI (FOUR, GET_HOLD_UNIQUE, CRSEPCB, COURSE,SSA1)
00000145 09
STATCD = ' '
-*
00000184 13
RCODE = DLIERR
07.05--->
00000185 14
22.09.
EC
*
00000146 10
SEQ = '1'
-*
6 10
*
24.02--->
00000147 11
CALL CCHECK (F01,PREFIX)
24.02--->
00000148 12
CALL CCHECK (F02,CRSNAME)
7.01.

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CHART TITLE - PROCEDURE OLITPLI (CRSEPCB) OPTIONS (MAIN)

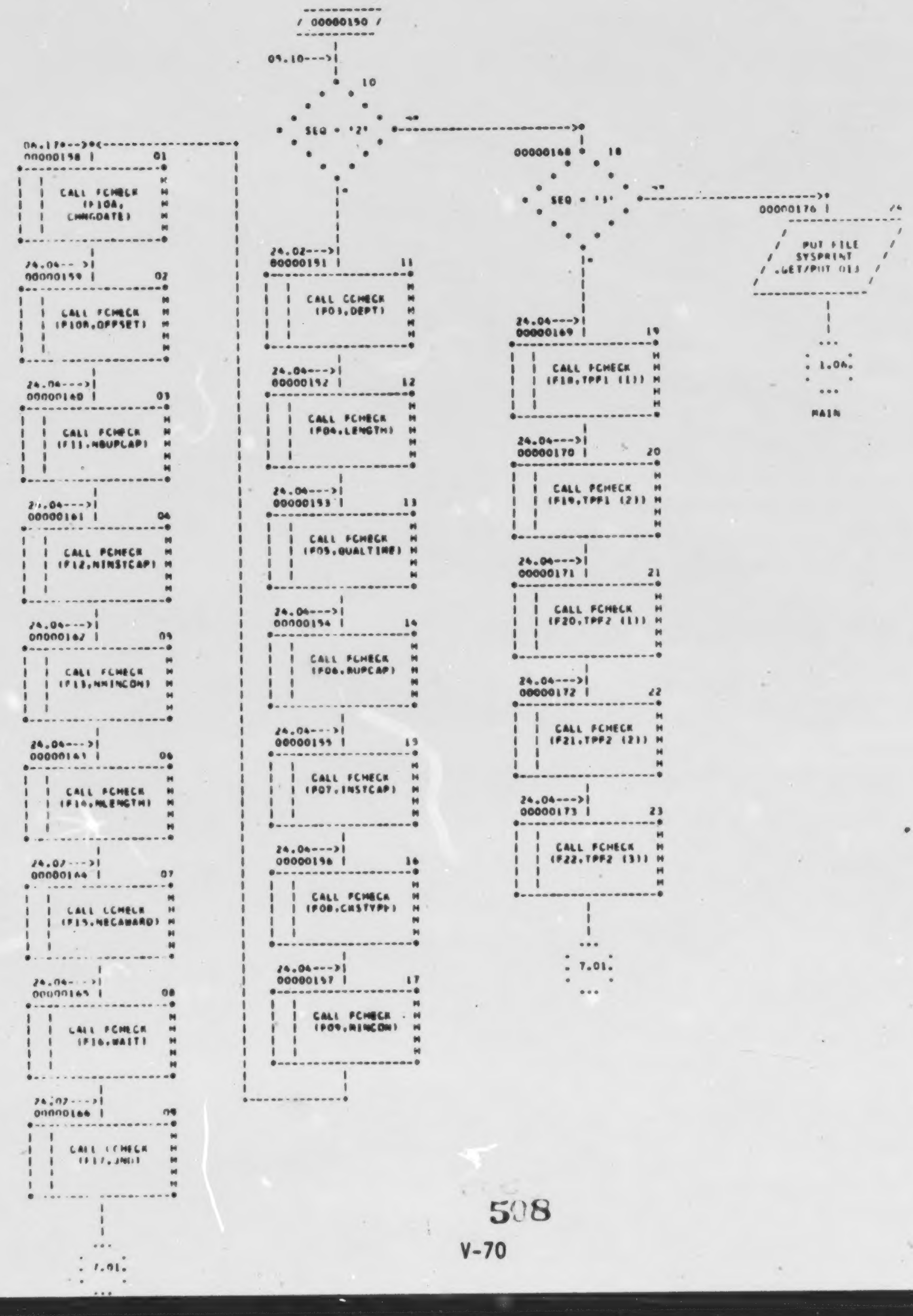
/ 00000150 /
09.10--->
10
SEQ = '2'
NE
=
00000168
18
SEQ = '3'
NE
=
00000176
24
PUT FILE SYSPRINT (GET/PUT 013)
1.06
MAIN
06.17--->
00000158
01
CALL FCHECK (F10A, CHNGDATE)
24.04--->
00000159
02
CALL FCHECK (F10B,OFFSET)
24.04--->
00000160
03
CALL FCHECK (F11,NBUPCAP)
24.04--->
00000161
04
CALL FCHECK (F12,NINSTCAP)
24.04--->
00000162
05
CALL FCHECK (F13,NMINCON)
24.04--->
00000163
06
CALL FCHECK (F14,NLENGTH)
24.02--->
00000164
07
CALL CCHECK (F15,NECAWARD)
24.04--->
00000165
08
CALL FCHECK (F16,WAIT)
24.02--->
00000166
09
CALL CCHECK (F17,JNO)
7.01
24.02--->
00000151
11
CALL CCHECK (F03,DEPT)
24.04--->
00000152
12
CALL FCHECK (F04,LENGTH)
24.04--->
00000153
13
CALL FCHECK (F05,QUALTIME)
24.04--->
00000154
14
CALL FCHECK (F06,BUPCAP)
24.04--->
00000155
15
CALL FCHECK (F07,INSTCAP)
24.04--->
00000156
16
CALL FCHECK (F08,CRSTYPE)
24.04--->
00000157
17
CALL FCHECK (F09,MINCON)
24.04--->
00000169
19
CALL FCHECK (F18,TPP1 (1))
24.04--->
00000170
20
CALL FCHECK (F19,TPP1 (2))
24.04--->
00000171
21
CALL FCHECK (F20,TPP2 (1))
24.04--->
00000172
22
CALL FCHECK (F21,TPP2 (2))
24.04--->
00000173
23
CALL FCHECK (F22,TPP2 (3))
7.01

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CHART TITLE - PROCEDURE DLITPLI (CRSEPCB) OPTIONS (MAIN)

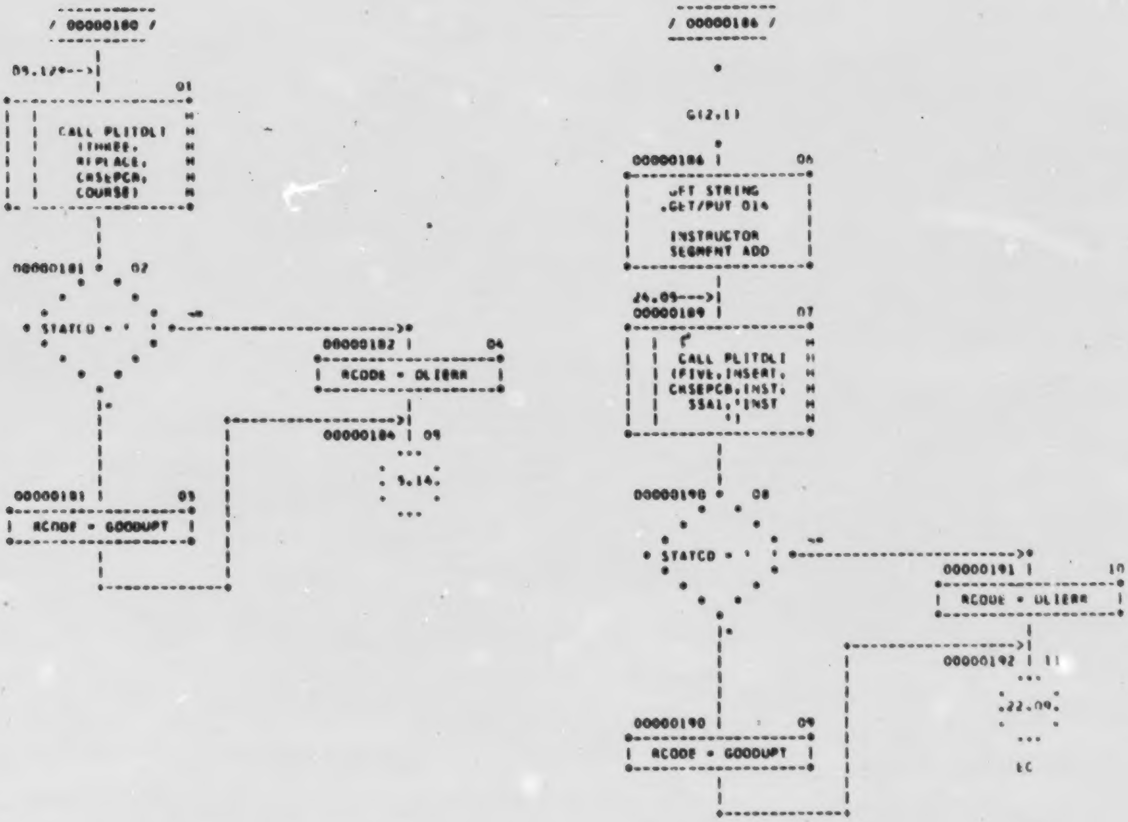
/ 00000180 /
05.17*-->
01
CALL PLITDLI (THREE, REPLACE, CRSEPCB, COURSE)
00000181 02
STATCD = ' '
00000182 04
RCODE = DLIERR
00000184 05
5.14.
00000183 03
RCODE = GOODUPT
/ 00000186 /
G(2,1)
00000186 06
GET STRING .GET/PUT 014
INSTRUCTOR SEGMENT ADD
24.09--->
00000189 07
CALL PLITDLI (FIVE, INSERT, CRSEPCB, INST, SSA1, 'INST ')
00000190 08
STATCD = ' '
00000191 10
RCODE = DLIERR
00000192 11
.22.09.
EC
00000190 09
RCODE = GOODUPT

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CHART TITLE - PROCEDURE DLITPLI (CASEPCB) OPTIONS (MAIN)

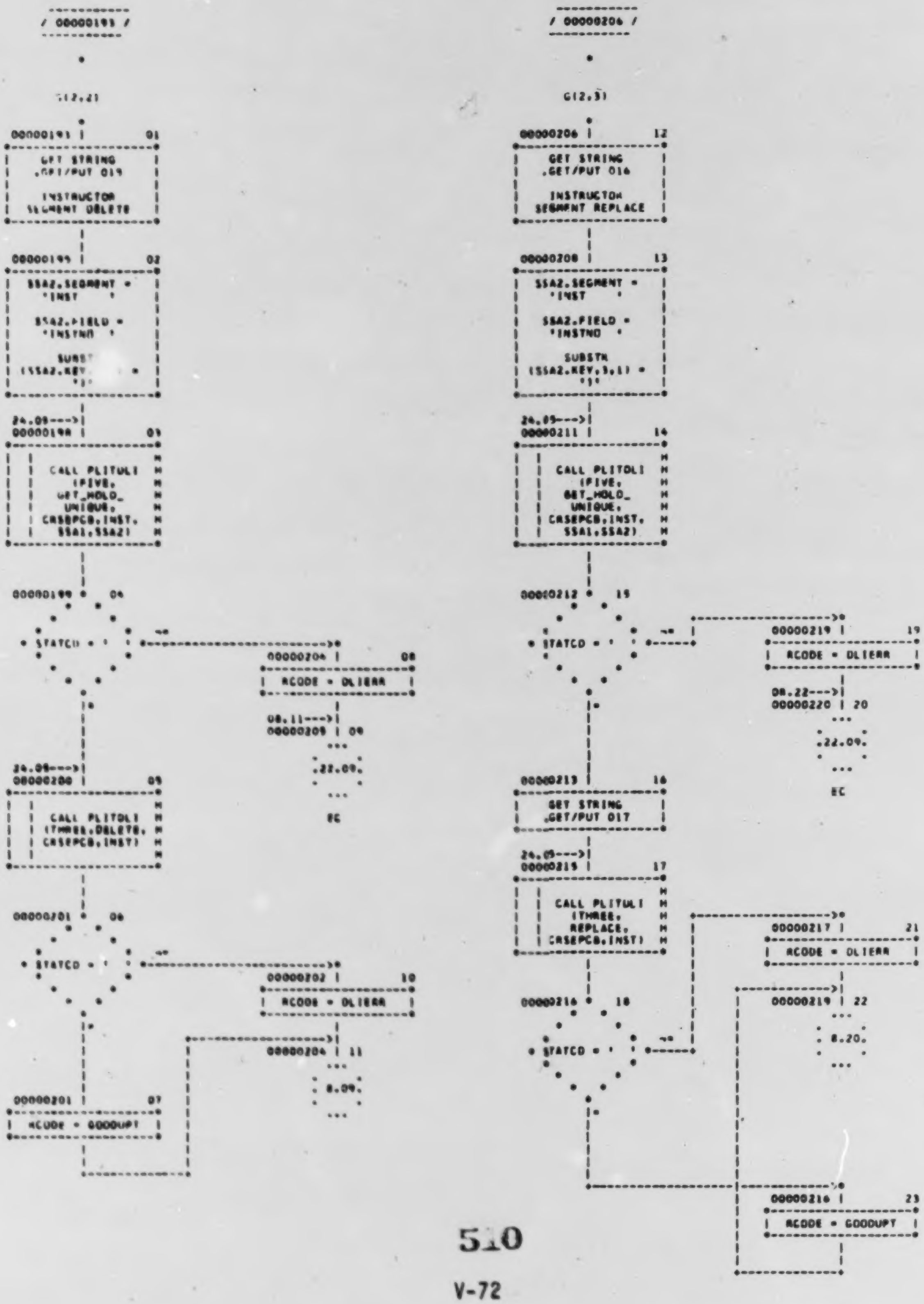
/ 00000193 /
G(2,2)
00000193 01
GET STRING .GET/PUT 015
INSTRUCTOR SEGMENT DELETE
00000195 02
SSA2.SEGMENT = 'INST '
SSA2.FIELD = 'INSTNO '
SUBSTR (SSA2.KEY,) = '1'
24.09--->
00000198 03
CALL PLITDLI (FIVE, GET_HOLD_ UNIQUE, CASEPCB,INST, SSA1,SSA2)
00000199 04
STATCD = ' '
¬=
=
00000204 08
RCODE = DLIERR
08.11--->
00000205 09
.22.09.
EC
24.09--->
00000200 05
CALL PLITDLI (THREE,DELETE, CASEPCB,INST)
00000201 06
STATCD = ' '
¬=
=
00000202 10
RCODE = DLIERR
00000204 11
8.09.
00000201 07
RCODE = GOODUPT
/ 00000206 /
G(2,3)
00000206 12
GET STRING .GET/PUT 016
INSTRUCTOR SEGMENT REPLACE
00000208 13
SSA2.SEGMENT = 'INST '
SSA2.FIELD = 'INSTNO '
SUBSTR (SSA2.KEY,3,1) = '1'
24.09--->
00000211 14
CALL PLITDLI (FIVE, GET_HOLD_ UNIQUE, CASEPCB,INST, SSA1,SSA2)
00000212 15
STATCD = ' '
¬=
=
00000219 19
RCODE = DLIERR
08.22--->
00000220 20
.22.09.
EC
00000213 16
GET STRING .GET/PUT 017
24.09--->
00000215 17
CALL PLITDLI (THREE, REPLACE, CASEPCB,INST)
00000216 18
STATCD = ' '
¬=
=
00000217 21
RCODE = DLIERR
00000219 22
8.20.
00000216 23
RCODE = GOODUPT

CHART TITLE - PROCEDURE DLITPLI (CASEPCB) OPTIONS (MAIN)

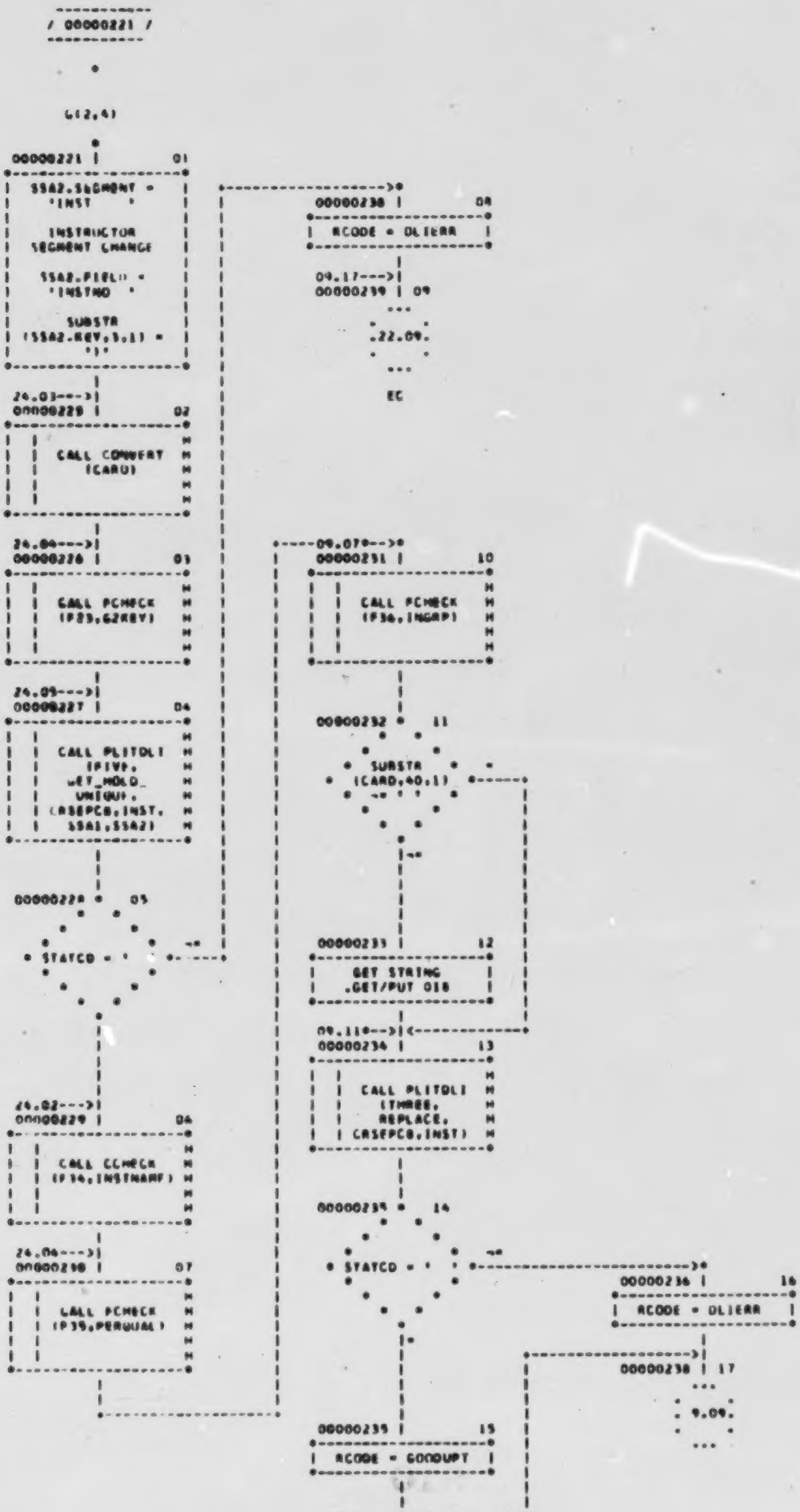
/ 00000221 /
G(2,4)
00000221 01
SSA2.SEGMENT = 'INST '
INSTRUCTOR SEGMENT CHANGE
SSA2.FIELD = 'INSTNO '
SUBSTR (SSA2.KEY,3,1) = '1'
24.03--->
00000229 02
CALL CONVERT (CARD)
24.04--->
00000226 03
CALL PCHECK (P23,G2KEY)
24.05--->
00000227 04
CALL PLITDLI (FIVE, GET_HOLD_UNIQUE, CASEPCB,INST, SSA1,SSA2)
00000228 05
STATCD = ' '
24.02--->
00000229 06
CALL CCHECK (P34,INSTNAME)
24.06--->
00000230 07
CALL PCHECK (P35,PERQUAL)
00000238 08
RCODE = DLIERR
09.17--->
00000239 09
.22.09.
EC
09.07--->
00000231 10
CALL PCHECK (P36,INGRP)
00000232 11
SUBSTR (CARD,40,1)
00000233 12
GET STRING .GET/PUT 018
09.11--->
00000234 13
CALL PLITDLI (THREE, REPLACE, CASEPCB,INST)
00000235 14
STATCD = ' '
00000236 16
RCODE = DLIERR
00000238 17
9.09.
00000235 15
RCODE = GOODUPT

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CHART TITLE - PROCEDURE DLITPLI (CASEPCB) OPTIONS (MAIN)

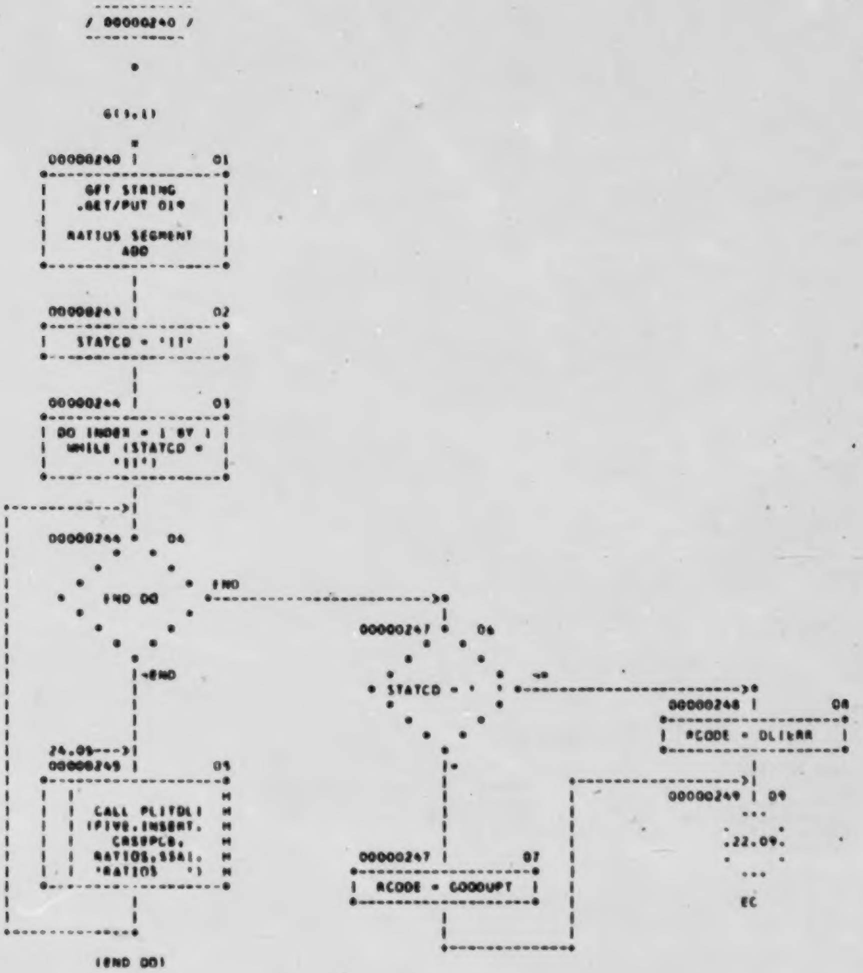
/ 00000240 /
6(1,1)
00000240 01
GET STRING
.GET/PUT 01*
RATIOS SEGMENT ADD
00000243 02
STATCD = '11'
00000244 03
DO INDEX = 1 BY 1 WHILE (STATCD = '11')
00000246 04
END DO
END
¬END
24.05--->
00000245 05
CALL PLITDLI (FIVE,INSERT, CASEPCB, RATIOS,SSA1, 'RATIOS ')
(END DO)
00000247 06
STATCD = ' '
¬=
=
00000247 07
RCODE = GOODUPT
00000248 08
RCODE = DLIERR
00000249 09
.22.09.
EC

CHART 11111 - PROCEDURE DLITPLI (CRSEPCB) OPTIONS (MAIN)

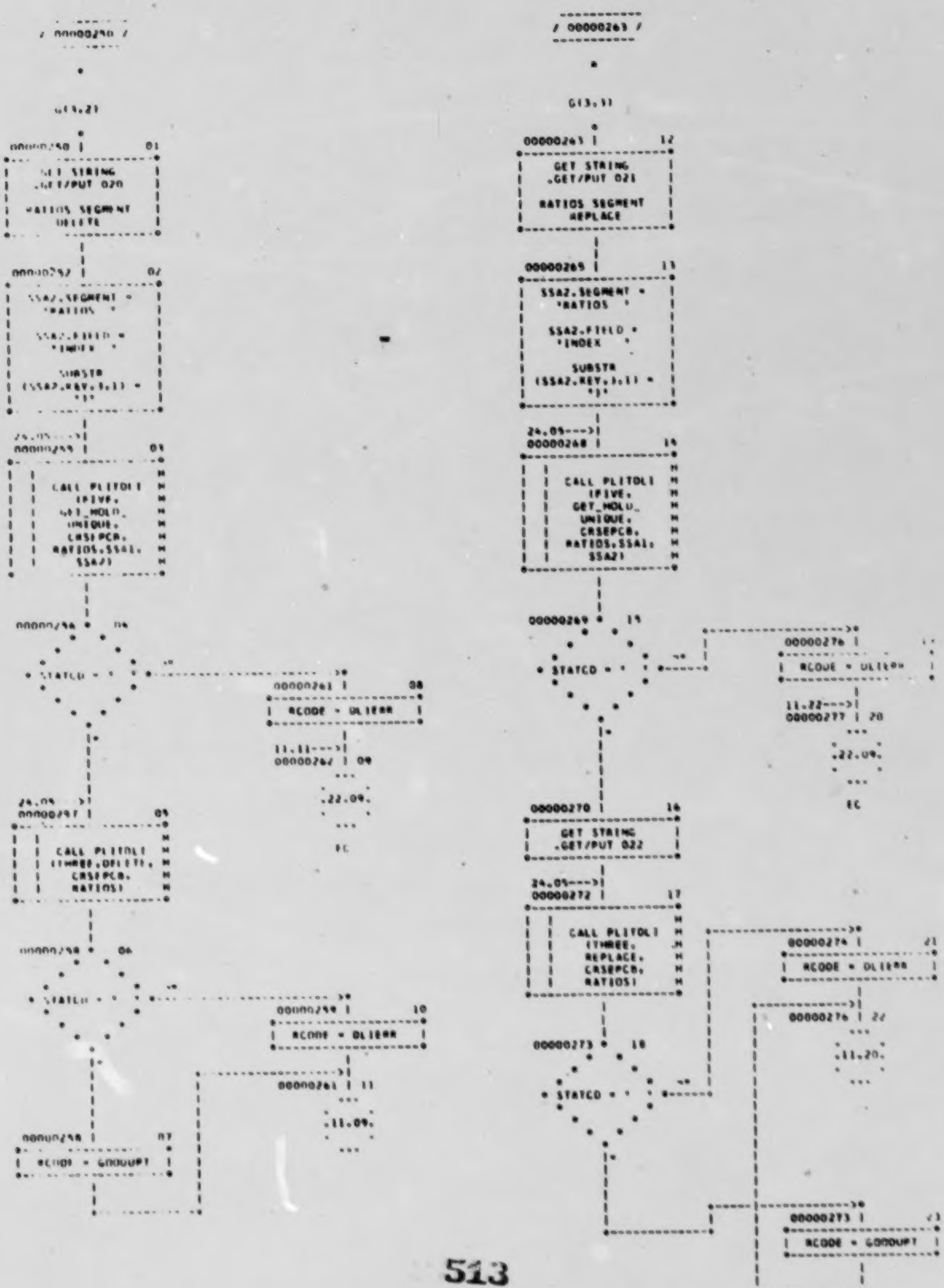
/ 00000250 /
G(3,2)
00000250 01
GET STRING .GET/PUT 020
RATIOS SEGMENT DELETE
00000252 02
SSA2.SEGMENT = 'RATIOS '
SSA2.FIELD = 'INDEX '
SUBSTR (SSA2.KEY,1,1) = '1'
24.05--->
00000255 03
CALL PLITDLI (FIVE, GET_HOLD_UNIQUE, CRSEPCB, RATIOS,SSA1, SSA2)
00000256 04
STATCD = ' '
00000261 08
RCODE = DLIERR
11.11--->
00000262 09
.22.09.
EC
24.05--->
00000257 05
CALL PLITDLI (THREE,DELETE, CRSEPCB, RATIOS)
00000258 06
STATCD = ' '
00000259 10
RCODE = DLIERR
00000261 11
.11.09.
00000258 07
RCODE = GOODUPT
/ 00000263 /
G(3,3)
00000263 12
GET STRING .GET/PUT 021
RATIOS SEGMENT REPLACE
00000265 13
SSA2.SEGMENT = 'RATIOS '
SSA2.FIELD = 'INDEX '
SUBSTR (SSA2.KEY,1,1) = '1'
24.05--->
00000268 14
CALL PLITDLI (FIVE, GET_HOLD_UNIQUE, CRSEPCB, RATIOS,SSA1, SSA2)
00000269 15
STATCD = ' '
00000276 19
RCODE = DLIERR
11.22--->
00000277 20
.22.09.
EC
00000270 16
GET STRING .GET/PUT 022
24.05--->
00000272 17
CALL PLITDLI (THREE, REPLACE, CRSEPCB, RATIOS)
00000273 18
STATCD = ' '
00000274 21
RCODE = DLIERR
00000276 22
.11.20.
00000273 23
RCODE = GOODUPT

CHART TITLE - PROCEDURE DLITPLI (CASEPCB) OPTIONS (MAIN)

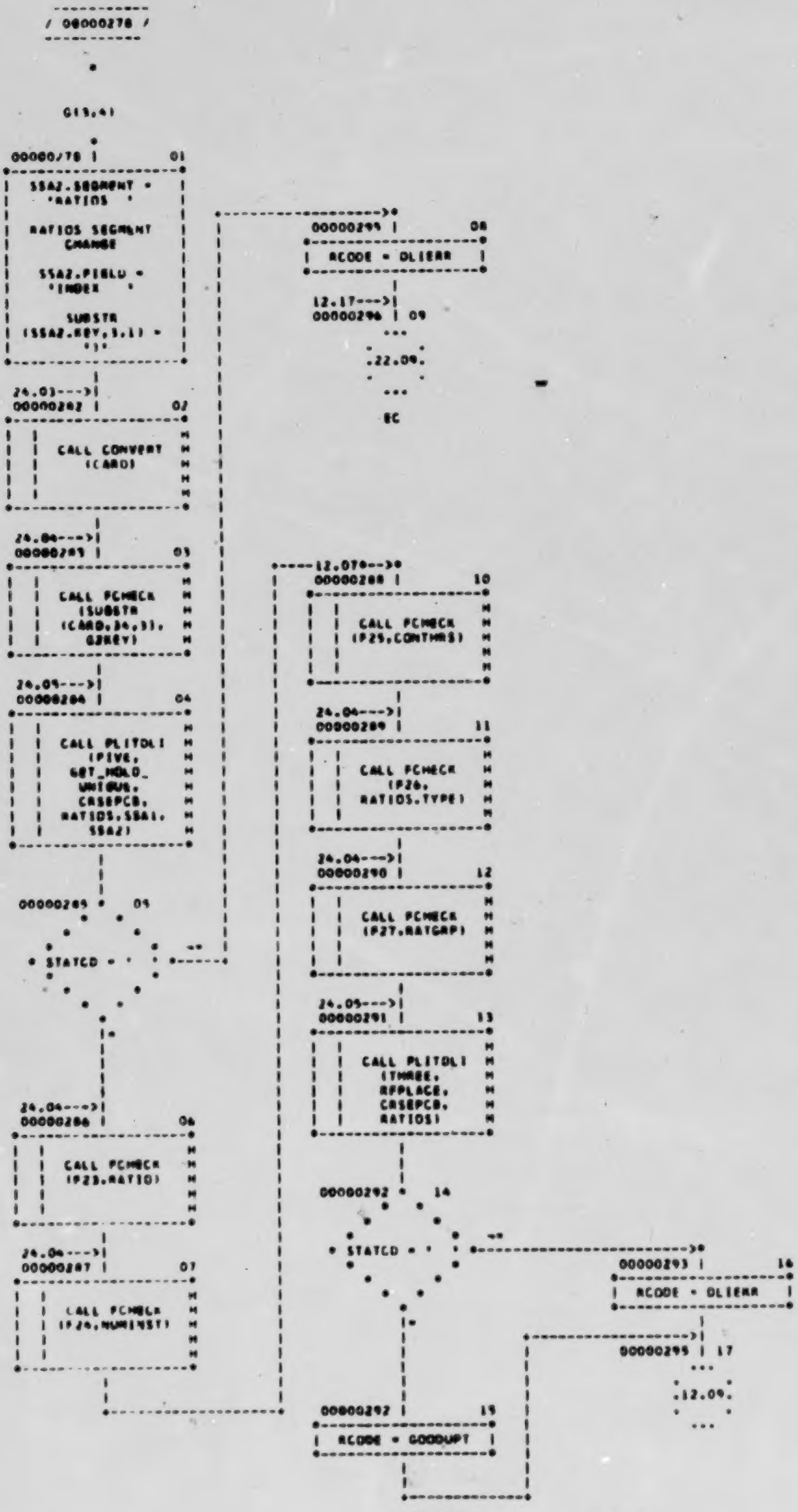
/ 00000278 /
G(3,4)
00000278 01
SSA2.SEGMENT = 'RATIOS '
RATIOS SEGMENT CHANGE
SSA2.FIELD = 'INDEX '
SUBSTR (SSA2.KEY,3,1) = ')'
24.03--->
00000282 02
CALL CONVERT (CARD)
24.04--->
00000283 03
CALL PCHECK (SUBSTR (CARD,34,3), G2KEY)
24.05--->
00000284 04
CALL PLITDLI (FIVE, GET_HOLD_UNIQUE, CASEPCB, RATIOS,SSA1, SSA2)
00000285 05
STATCD = ' '
-=
=
24.04--->
00000286 06
CALL PCHECK (P23,RATIO)
24.04--->
00000287 07
CALL PCHECK (P24,NUMINST)
00000295 08
RCODE = DLIERR
12.17--->
00000296 09
.22.09.
EC
12.07*-->
00000288 10
CALL PCHECK (P25,CONTHRS)
24.04--->
00000289 11
CALL PCHECK (P26, RATIOS.TYPE)
24.04--->
00000290 12
CALL PCHECK (P27,RATGRP)
24.05--->
00000291 13
CALL PLITDLI (THREE, REPLACE, CASEPCB, RATIOS)
00000292 14
STATCD = ' '
-=
=
00000293 16
RCODE = DLIERR
00000295 17
.12.09.
00000292 15
RCODE = GOODUPT

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CHART TITLE - PROCEDURE DLTPLT (CASEPCB) OPTIONS (MAIN)

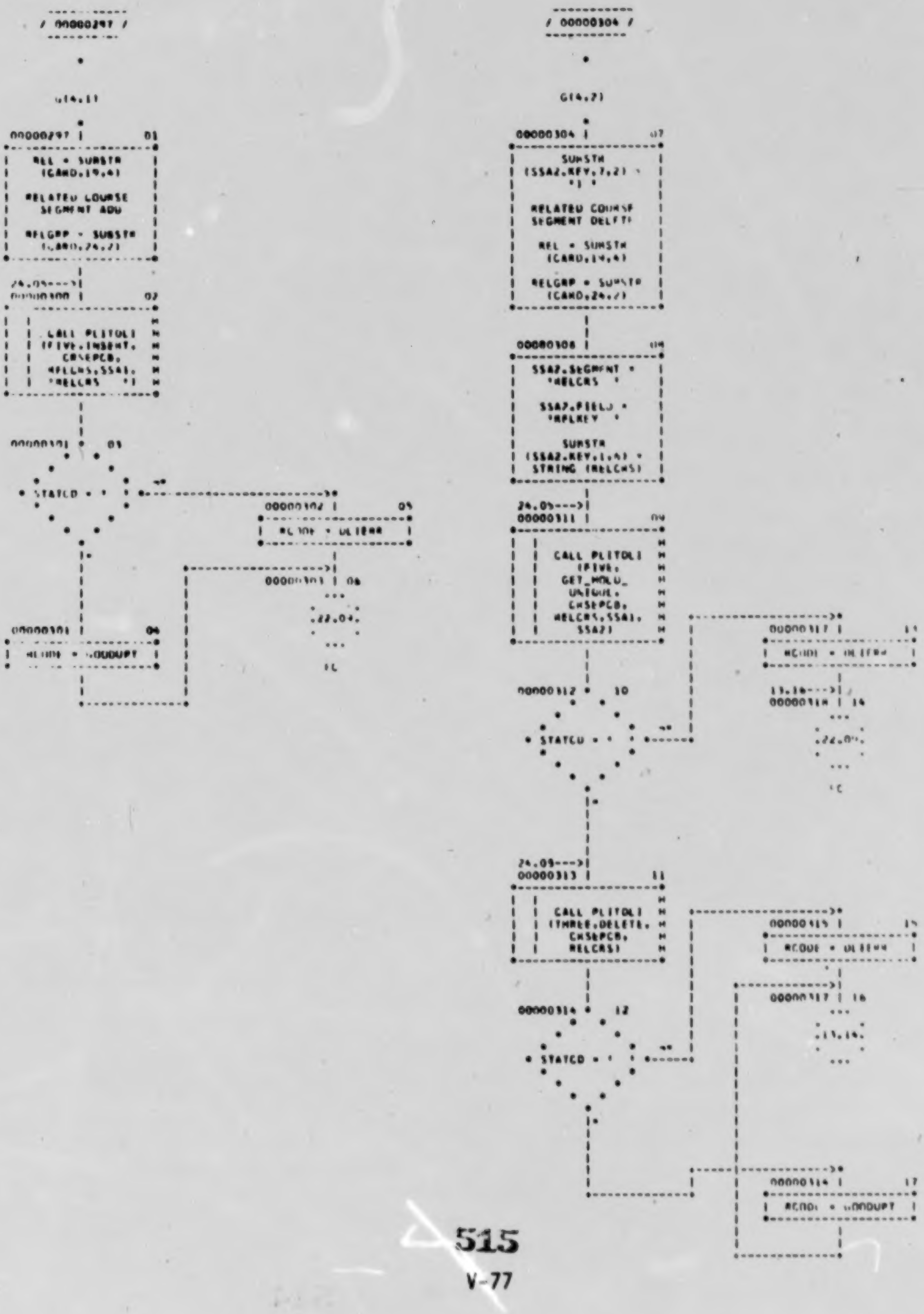
/ 00000297 /
G(4,1)
00000297 01
REL = SUBSTR (CARD,19,4)
RELATED COURSE SEGMENT ADD
RELGRP = SUBSTR (CARD,24,2)
24.05--->
00000300 02
CALL PLITDLI (FIVE,INSERT, CSEPCB, RELCRS,SSA1, 'RELCRS ')
00000301 03
STATCD = ' '
NO
00000302 05
RCODE = DLIERR
00000303 06
22.04
00000301 04
RCODE = GOODUPT
/ 00000304 /
G(4,2)
00000304 07
SUBSTR (SSA2.KEY,7,2) = ')'
RELATED COURSE SEGMENT DELETE
REL = SUBSTR (CARD,19,4)
RELGRP = SUBSTR (CARD,24,2)
00000308 08
SSA2.SEGMENT = 'RELCRS '
SSA2.FIELD = 'RPLKEY '
SUBSTR (SSA2.KEY,1,6) = STRING (RELCRS)
24.05--->
00000311 09
CALL PLITDLI (FIVE, GET_HOLD_ UNIQUE, CSEPCB, RELCRS,SSA1, SSA2)
00000312 10
STATCD = ' '
NO
00000317 13
RCODE = DLIERR
13.16--->
00000318 14
22.04
24.05--->
00000313 11
CALL PLITDLI (THREE,DELETE, CSEPCB, RELCRS)
00000314 12
STATCD = ' '
NO
00000315 15
RCODE = DLIERR
00000317 16
13.16
00000316 17
RCODE = GOODUPT

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CHART TITLE - PROCEDURE DLITPLI (CASEPCB) OPTIONS (MAIN)

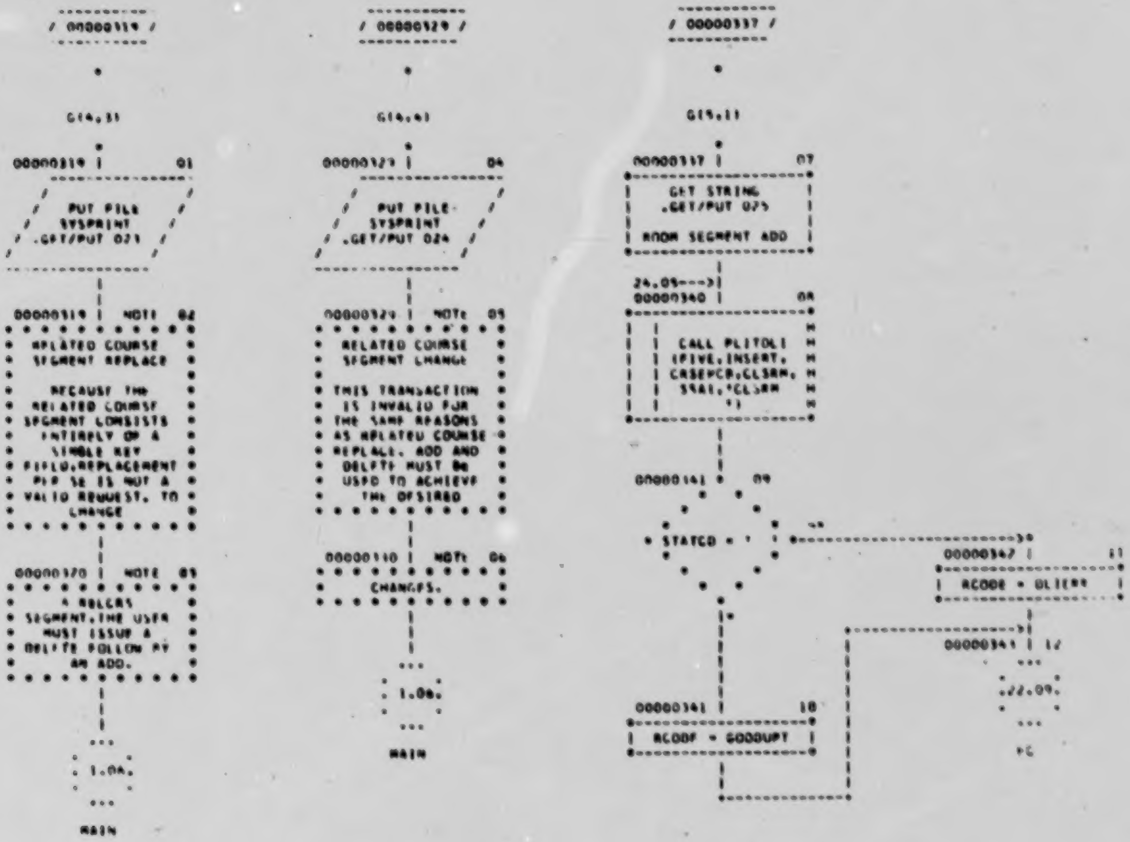

/ 00000319 /
G(4,3)
00000319 01
PUT FILE
SYSPRINT
.GET/PUT 023
00000319 NOTE 02
RELATED COURSE
SEGMENT REPLACE
BECAUSE THE
RELATED COURSE
SEGMENT CONSISTS
ENTIRELY OF A
SINGLE KEY
FIELD,REPLACEMENT
PER SE IS NOT A
VALID REQUEST. TO
CHANGE
00000320 NOTE 03
A ROLCRS
SEGMENT,THE USER
MUST ISSUE A
DELETE FOLLOW BY
AN ADD.
1.06.
MAIN
/ 00000329 /
G(4,4)
00000329 04
PUT FILE
SYSPRINT
.GET/PUT 024
00000329 NOTE 05
RELATED COURSE
SEGMENT CHANGE
THIS TRANSACTION
IS INVALID FOR
THE SAME REASONS
AS RELATED COURSE
REPLACE. ADD AND
DELETE MUST BE
USED TO ACHIEVE
THE DESIRED
00000330 NOTE 06
CHANGES.
1.06.
MAIN
/ 00000337 /
G(5,1)
00000337 07
GET STRING
.GET/PUT 025
ROOM SEGMENT ADD
24.05--->
00000340 08
CALL PLITDLI
(FIVE,INSERT,
CASEPCB,CLSRM,
SSA1,'CLSRM
')
00000341 09
STATCD = '
NE
00000342 11
RCODE = DLIERR
*
00000341 10
RCODE = GOODUPT
00000343 12
22.05.
RC

CHART TITLE - PROCEDURE DLITPLI (CRSEPCB) OPTIONS (MAIN)

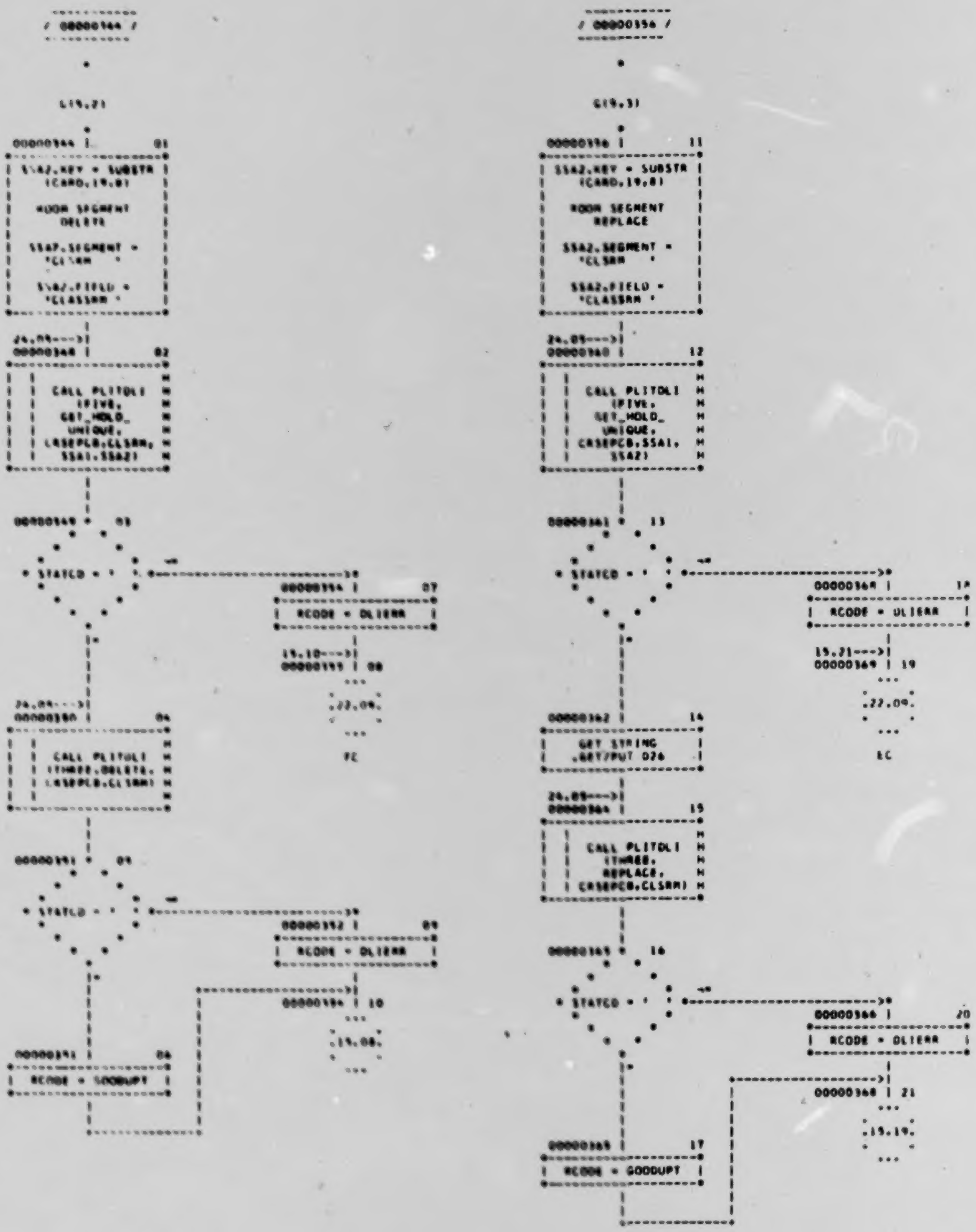
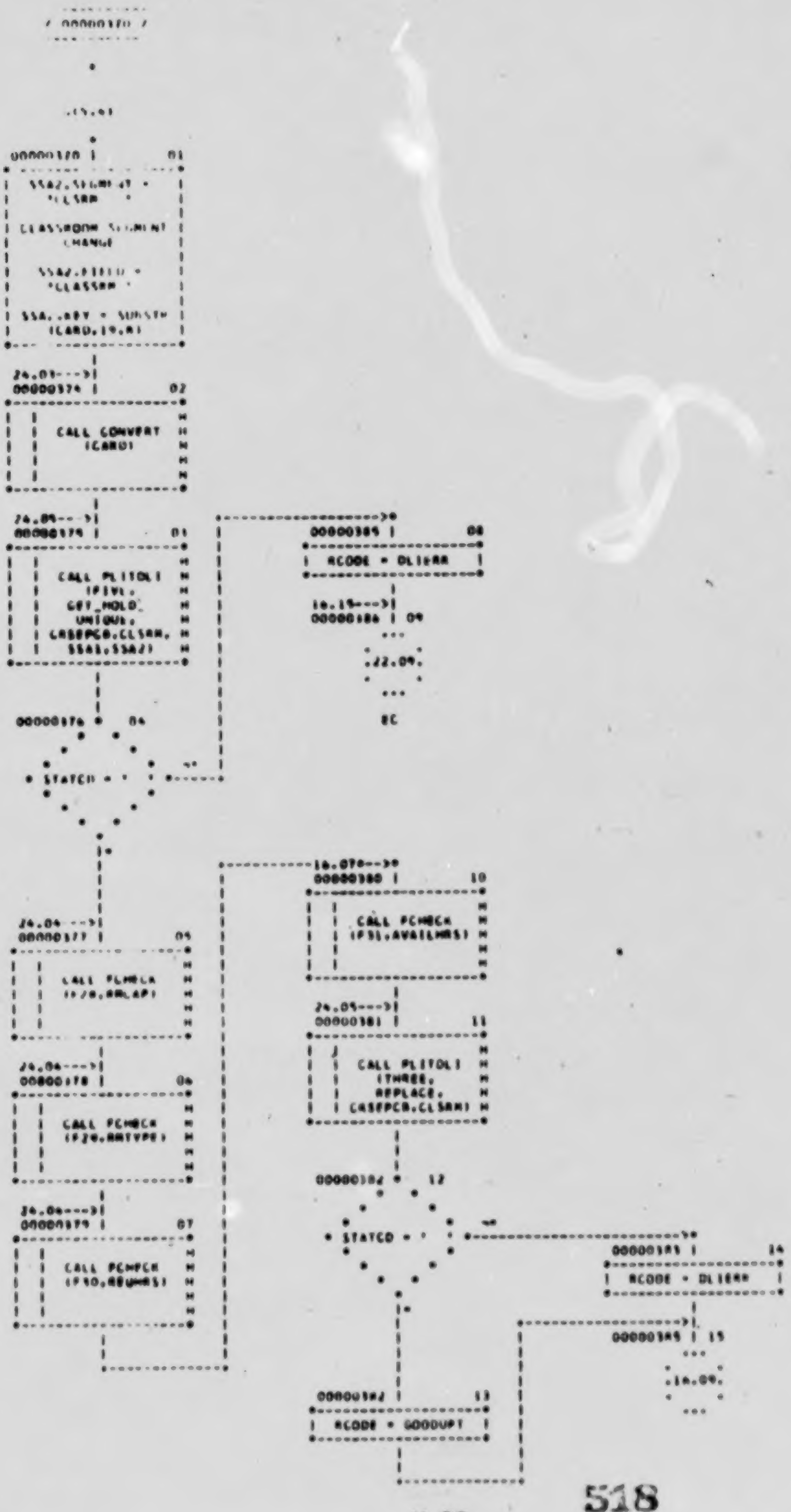

/ 00000344 /
G(9.2)
00000344 01
SSA2.KEY = SUBSTR (CARD,19,8)
ROOM SEGMENT DELETE
SSA2.SEGMENT = 'CLSRM '
SSA2.FIELD = 'CLASSRM '
24.09--->
00000348 02
CALL PLITDLI (FIVE, GET_HOLD_ UNIQUE, CRSEPCB,CLSRM, SSA1,SSA2)
00000349 03
STATCD = ' '
-=
00000354 07
RCODE = DLIERR
15.10--->
00000355 08
.22.09.
FC
=
24.09--->
00000350 04
CALL PLITDLI (THREE,DELETE, CRSEPCB,CLSRM)
00000351 05
STATCD = ' '
-=
00000352 09
RCODE = DLIERR
00000354 10
.15.08.
=
00000353 06
RCODE = GOODUPT
/ 00000356 /
G(9.3)
00000356 11
SSA2.KEY = SUBSTR (CARD,19,8)
ROOM SEGMENT REPLACE
SSA2.SEGMENT = 'CLSRM '
SSA2.FIELD = 'CLASSRM '
24.09--->
00000360 12
CALL PLITDLI (FIVE, GET_HOLD_ UNIQUE, CRSEPCB,SSA1, SSA2)
00000361 13
STATCD = ' '
-=
00000368 18
RCODE = DLIERR
15.21--->
00000369 19
.22.09.
EC
=
00000362 14
GET STRING .GET/PUT 026
24.09--->
00000364 15
CALL PLITDLI (THREE, REPLACE, CRSEPCB,CLSRM)
00000365 16
STATCD = ' '
-=
00000366 20
RCODE = DLIERR
00000368 21
.15.19.
=
00000365 17
RCODE = GOODUPT

CHART TITLE - PROCEDURE OUTPUT (CASEPCB) OPTIONS (MAIN)


/ 00000370 /
.15.01
00000370 01
SSA2.SEGMENT = 'CLSRM '
CLASSROOM SEGMENT CHANGE
SSA2.FIELD = 'CLASSRM '
SSA2.KEY = SUBSTR (CARD,19,8)
24.03--->
00000374 02
CALL CONVERT (CARD)
24.09--->
00000375 03
CALL PLITDLI (FIVE, GET_HOLD_UNIQUE, CASEPCB.CLSRM, SSA1,SSA2)
00000376 04
STATCD = ' '
NO
00000385 08
RCODE = DLIERR
16.15--->
00000386 09
.22.09.
EC
YES
24.04--->
00000377 05
CALL PCHECK (F28,RMLAP)
24.04--->
00000378 06
CALL PCHECK (F29,RMTYPE)
24.04--->
00000379 07
CALL PCHECK (F30,REQHRS)
16.07--->
00000380 10
CALL PCHECK (F31,AVAILHRS)
24.05--->
00000381 11
CALL PLITDLI (THREE, REPLACE, CASEPCB.CLSRM)
00000382 12
STATCD = ' '
NO
00000383 14
RCODE = DLIERR
00000385 15
.16.09.
YES
00000382 13
RCODE = GOODUPT

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[illegible]

CHART TITLE PROCEDURE DLITPLI [illegible]

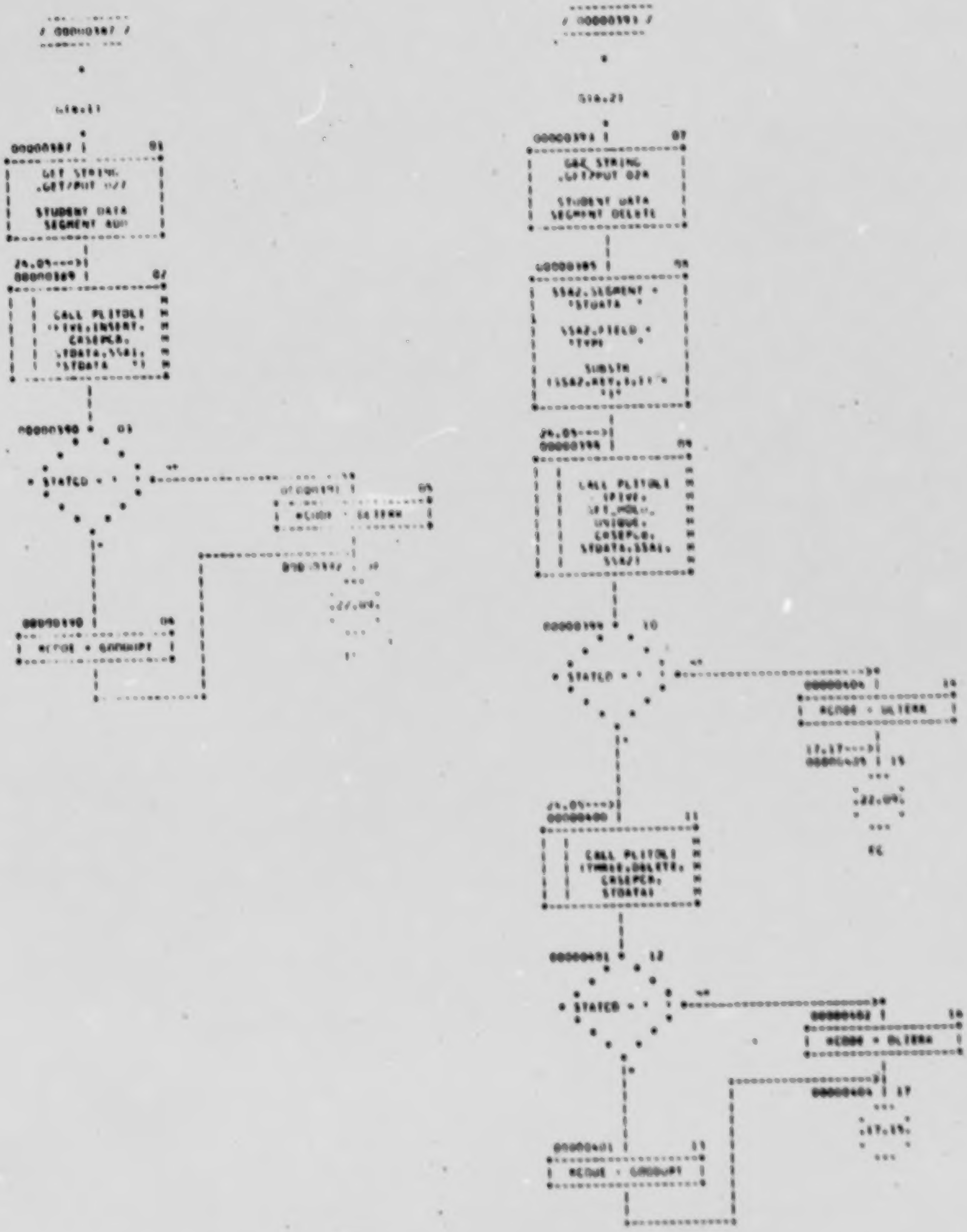

00000387
00000388 01
GET STRING .GET/PUT 02
STUDENT DATA SEGMENT ADD
24.05
00000389 02
CALL PLITDLI (FIVE,INSERT, CASEPCB, STDATA,SSA1, 'STDATA ')
00000390 03
STATCD = ' '
00000391 05
ACODE = DLTERR
00000392 10
22.09
00000390 04
ACODE = GOODUPT
00000393
00000394 07
GET STRING .GET/PUT 02A
STUDENT DATA SEGMENT DELETE
00000395 08
SSA2.SEGMENT = 'STDATA '
SSA2.FIELD = 'TYPE '
SUBSTR (SSA2.KEY,1,1) = '1'
24.05
00000396 09
CALL PLITDLI (FIVE, GET_HOLD_UNIQUE, CASEPCB, STDATA,SSA1, SSA2)
00000399 10
STATCD = ' '
00000404 14
ACODE = DLTERR
17.17
00000405 15
22.09
EC
24.05
00000400 11
CALL PLITDLI (THREE,DELETE, CASEPCB, STDATA)
00000401 12
STATCD = ' '
00000402 16
ACODE = DLTERR
00000406 17
17.15
00000403 13
ACODE = GOODUPT

CHART TITLE - PROCEDURE [illegible]

CHART TITLE - PROCEDURE DLITPLI (CASEPCR) OPTIONS (MAIN)

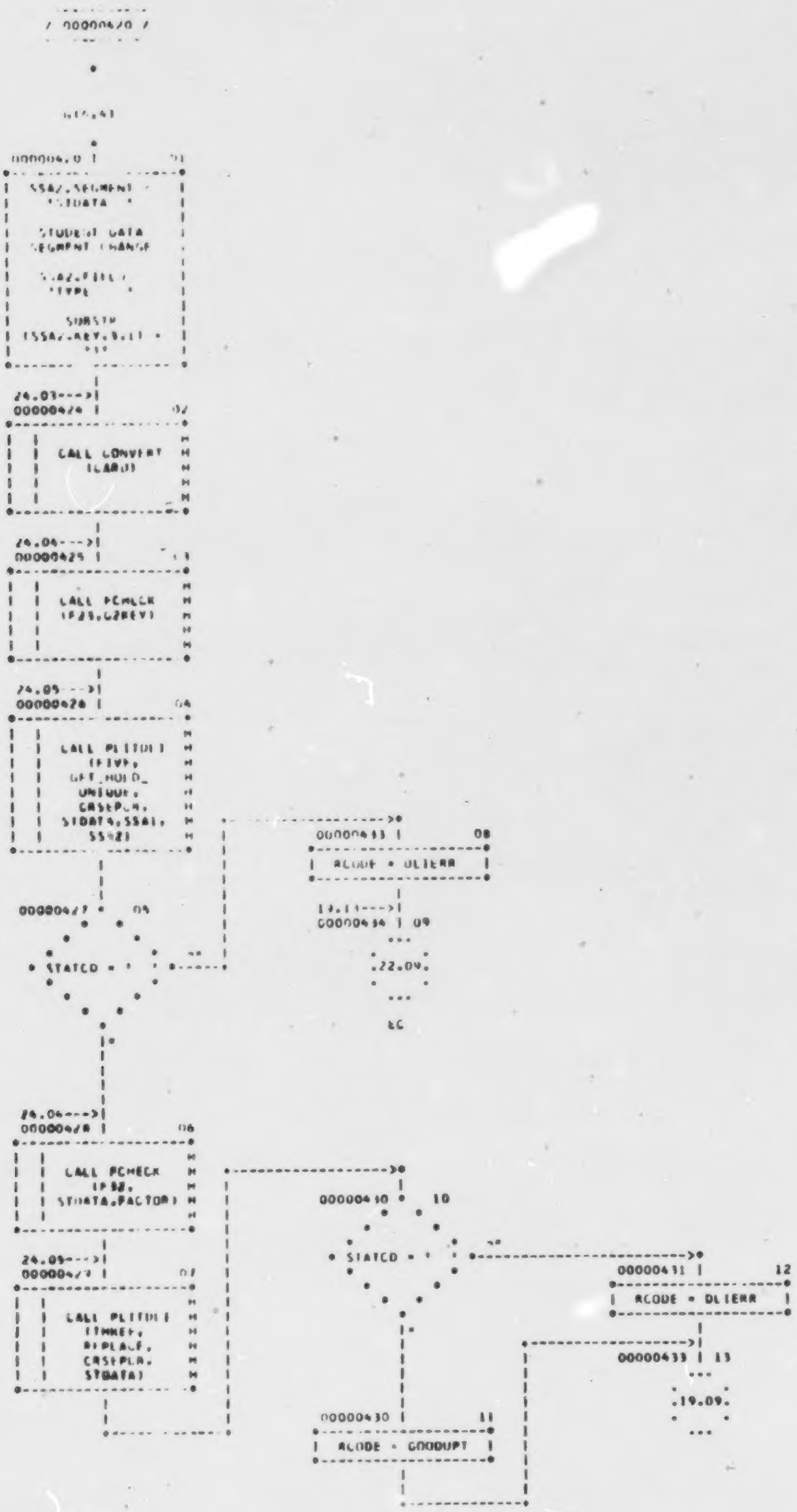

/ 00000420 /
01
SSA2.SEGMENT = 'STDATA '
STUDENT DATA SEGMENT CHANGE
SSA2.FIELD = 'TYPE '
SUBSTR (SSA2.KEY,3,1) = '1'
24.03--->
00000424
02
CALL CONVERT (CARD)
24.04--->
00000425
03
CALL PCHECK (F23,G2KEY)
24.05--->
00000426
04
CALL PLITDLI (FIVE, GET_HOLD_UNIQUE, CASEPCB, STDATA,SSA1, SSA2)
00000427
05
STATCD = ' '
NO
YES
00000433
08
RCODE = DLIERR
13.11--->
00000434
09
22.09
EC
24.06--->
00000428
06
CALL PCHECK (F32, STDATA,FACTOR)
24.05--->
00000429
07
CALL PLITDLI (THREE, REPLACE, CASEPCB, STDATA)
00000410
10
STATCD = ' '
NO
YES
00000431
12
RCODE = DLIERR
00000433
13
19.09
00000430
11
RCODE = GOODUPT

CHART TITLE PROCEDURE DLITPL1 (CRSEPCB) OPTIONS (MAIN)

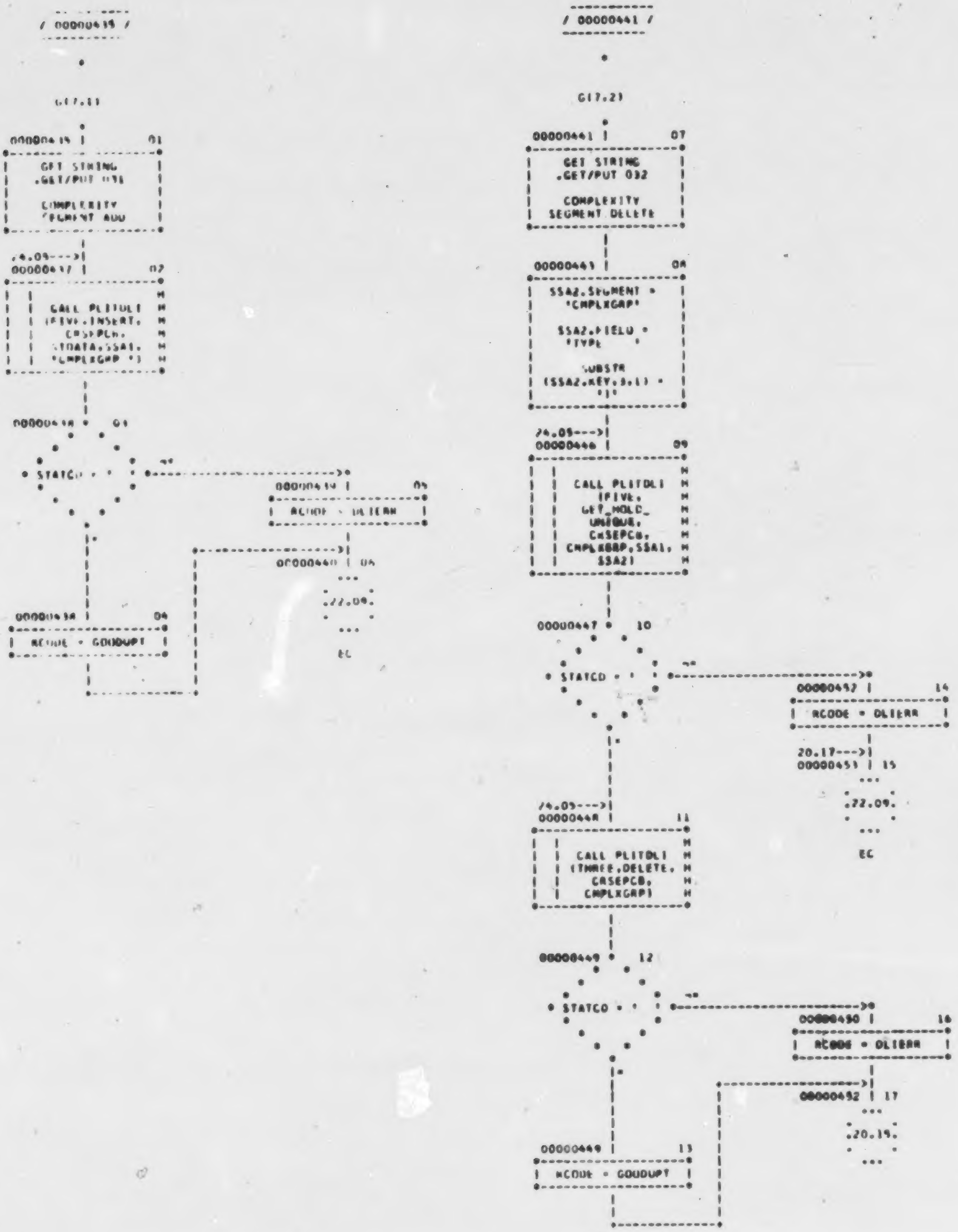

/ 00000435 /
G(7.1)
00000435 01
GET STRING .GET/PUT 031
COMPLEXITY SEGMENT ADD
24.05--->
00000437 02
CALL PLITDLI (FIVE,INSERT, CRSEPCB, STDATA,SSA1, 'CMPLXGRP ')
00000438 03
STATCD = ' '
¬=
=
00000439 05
RCODE = DLIERR
00000440 06
.22.09.
EC
00000438 04
RCODE = GOODUPT
/ 00000441 /
G(7.2)
00000441 07
GET STRING .GET/PUT 032
COMPLEXITY SEGMENT DELETE
00000443 08
SSA2.SEGMENT = 'CMPLXGRP'
SSA2.FIELD = 'TYPE '
SUBSTR (SSA2.KEY,3,1) = '1'
24.05--->
00000446 09
CALL PLITDLI (FIVE, GET_HOLD_ UNIQUE, CRSEPCB, CMPLXGRP,SSA1, SSA2)
00000447 10
STATCD = ' '
¬=
=
00000452 14
RCODE = DLIERR
20.17--->
00000453 15
.22.09.
EC
24.05--->
00000448 11
CALL PLITDLI (THREE,DELETE, CRSEPCB, CMPLXGRP)
00000449 12
STATCD = ' '
¬=
=
00000450 16
RCODE = DLIERR
00000452 17
.20.15.
00000449 13
RCODE = GOODUPT

CHART TITLE - PROCEDURE DLTIPLT (CRSEPCR) OPTIONS (MAIN)

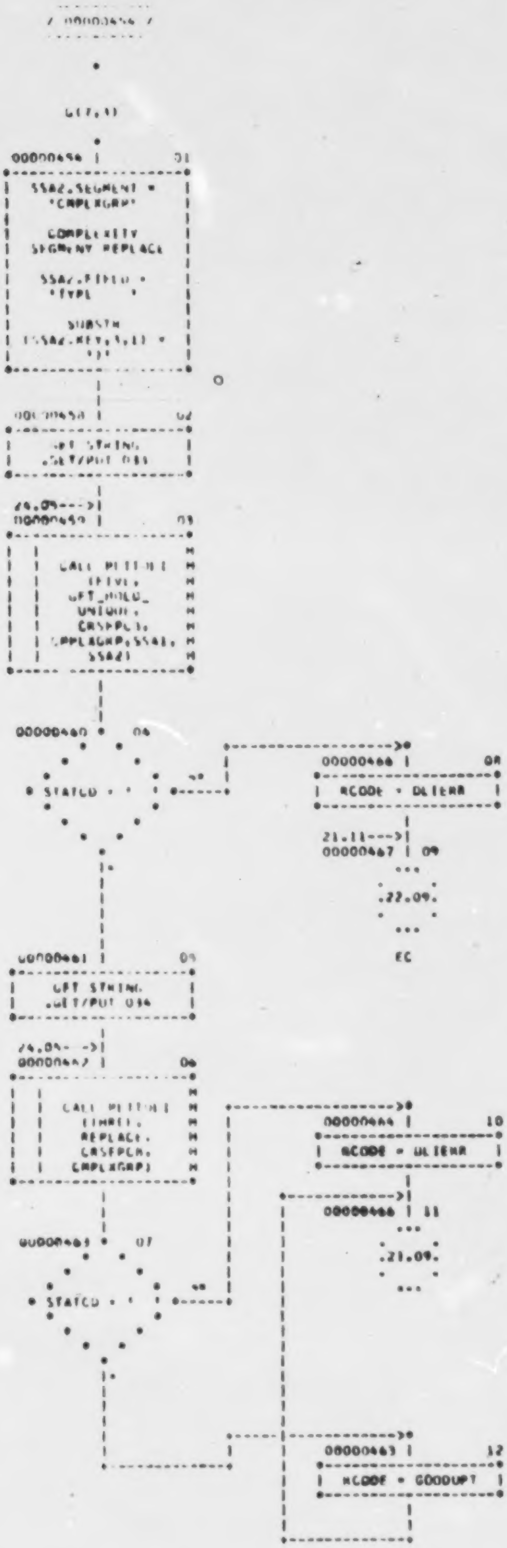

/ 00000456 /
G(7,1)
00000456 01
SSA2.SEGMENT = 'CMPLXGRP'
COMPLEXITY SEGMENT REPLACE
SSA2.FIELD = 'TYPE '
SUBSTR (SSA2.KEY,5,1) = '1'
00000458 02
GET STRING .GET/PUT 031
24.09--->
00000459 03
CALL PLITDLI (FIVE, GET_HOLD_UNIQUE, CRSEPCB, CMPLXGRP,SSA1, SSA2)
00000460 04
STATCD = ' '
NO
00000466 08
RCODE = DLIERR
21.11--->
00000467 09
.22.09.
EC
00000461 05
GET STRING .GET/PUT 034
24.09--->
00000462 06
CALL PLITDLI (THREE, REPLACE, CRSEPCB, CMPLXGRP)
00000463 07
STATCD = ' '
NO
00000464 10
RCODE = DLIERR
00000466 11
.21.09.
00000463 12
RCODE = GOODUPT

CHART TITLE - PROCEDURE DLITPLI (CRSEPCB) OPTIONS (MAIN)

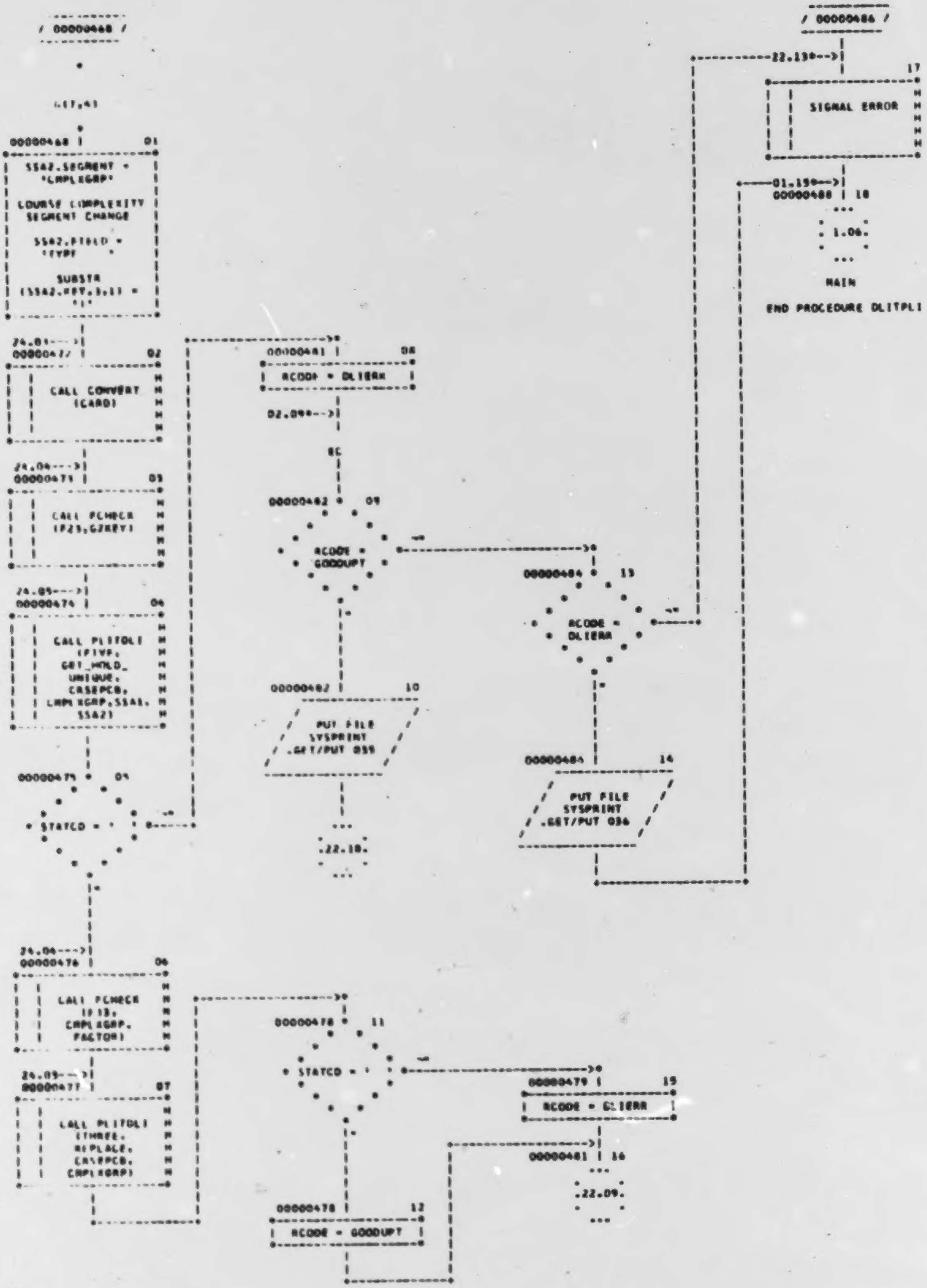
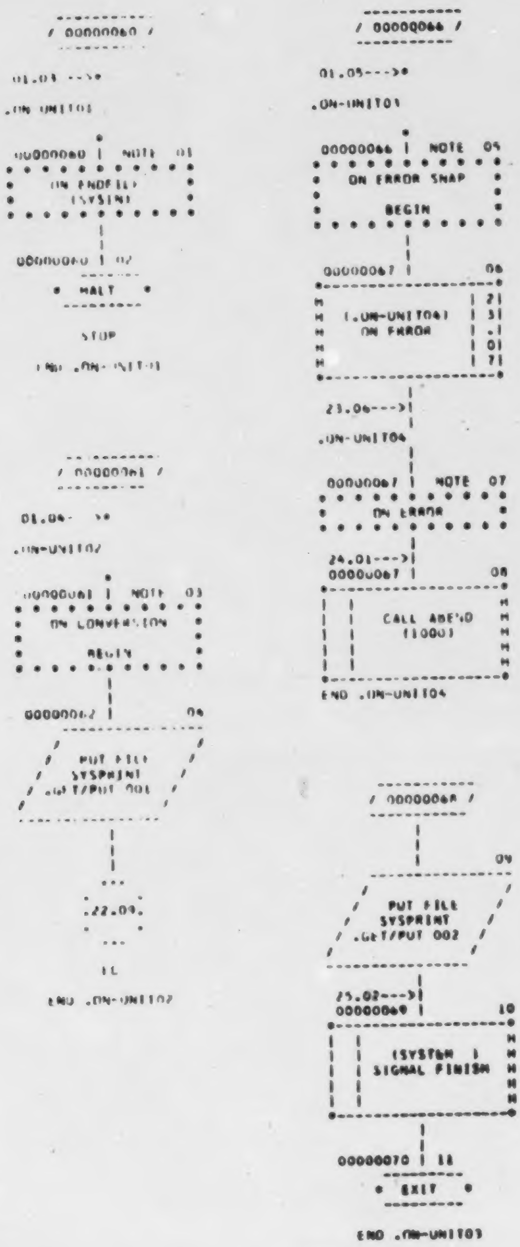

/ 00000468 /
G17,A1
00000468 01
SSA2.SEGMENT = 'CMPLXGRP'
COURSE COMPLEXITY SEGMENT CHANGE
SSA2.FIELD = 'TYPE '
SUBSTR (SSA2.KEY,3,1) = '1'
24.01--->
00000472 02
CALL CONVERT (CARD)
24.04--->
00000473 03
CALL PCHECK (P23,G2KEY)
24.05--->
00000474 04
CALL PLITDLI (FIVE, GET_HOLD_ UNIQUE, CRSEPCB, CMPLXGRP,SSA1, SSA2)
00000475 05
STATCD = ' '
24.06--->
00000476 06
CALL PCHECK (P13, CMPLXGRP, FACTOR)
24.09--->
00000477 07
CALL PLITDLI (THREE, REPLACE, CRSEPCB, CMPLXGRP)
00000481 08
RCODE = DLIERR
02.09*-->
EC
00000482 09
RCODE = GOODUPT
00000482 10
PUT FILE SYSPRINT .GET/PUT 035
.22.10.
00000478 11
STATCD = ' '
00000478 12
RCODE = GOODUPT
00000484 13
RCODE = DLIERR
00000484 14
PUT FILE SYSPRINT .GET/PUT 036
00000479 15
RCODE = DLIERR
00000481 16
.22.09.
/ 00000486 /
22.13*-->
17
SIGNAL ERROR
01.15*-->
00000488 18
1.06.
MAIN
END PROCEDURE DLITPLI

CHART TITLE - ON-UNIT ACTION BLOCKS


/ 00000060 /
01.03 --->*
.ON-UNIT01
00000060 | NOTE 01
ON ENDFILE (SYSIN)
00000060 | 02
* HALT *
STOP
END .ON-UNIT01
/ 00000061 /
01.04--->*
.ON-UNIT02
00000061 | NOTE 03
ON CONVERSION
BEGIN
00000062 | 04
PUT FILE SYSPRINT .GET/PUT 001
.22.09.
EE
END .ON-UNIT02
/ 00000066 /
01.05--->*
.ON-UNIT03
00000066 | NOTE 05
ON ERROR SNAP
BEGIN
00000067 | 06
(.ON-UNIT04) ON ERROR
23.01
23.06--->|
.ON-UNIT04
00000067 | NOTE 07
ON ERROR
24.01--->|
00000067 | 08
CALL ABEND (1000)
END .ON-UNIT04
/ 00000068 /
09
PUT FILE SYSPRINT .GET/PUT 002
25.02--->|
00000069 | 10
(SYSTEM) SIGNAL FINISH
00000070 | 11
* EXIT *
END .ON-UNIT03

```
              /* COURSE FILE UNLOAD PROGRAM */                                            PAGE

              SOURCE LISTING.

 STMT LEVEL NEST
                              /* COURSE FILE UNLOAD PROGRAM */
   1                DLITPLI: PROCEDURE(CRSEPCB) OPTIONS(MAIN);

                              /****************/
                              /* COURSE PCB */
                              /****************/

   2      1                   DECLARE 1 CRSEPCB,
                                          2 DBNAME CHAR(8),
                                          2 LEVFD CHAR(2),
                                          2 STATCD CHAR(2),
                                          2 PROCOPT CHAR(4),
                                          2 JCBADDR POINTER,
                                          2 SEGFD CHAR(8),
                                          2 KEYLEN FIXED BIN(31),
                                          2 NOSS FIXED BIN(31),
                                          2 KEYFD CHAR(12),
                                          2 SN1 CHAR(8),
                                          2 SN2 CHAR(8),
                                          2 SN3 CHAR(8),
                                          2 SN4 CHAR(8),
                                          2 SN5 CHAR(8),
                                          2 SN6 CHAR(8),
                                          2 SN7 CHAR(8);

                              /*********************/
                              /* FUNCTION CODES */
                              /*********************/

   3      1                   DECLARE (GET_UNIQUE         CHAR(4) INIT('GU  '),
                                       GET_NEXT           CHAR(4) INIT('GN  '),
                                       GET_NEXT_WP        CHAR(4) INIT('GNP '),
                                       GET_HOLD_UNIQUE    CHAR(4) INIT('GHU '),
                                       GET_HOLD_NEXT      CHAR(4) INIT('GHN '),
                                       GET_HOLD_NEXT_WP   CHAR(4) INIT('GHNP'),
                                       INSERT             CHAR(4) INIT('ISRT'),
                                       DELETE             CHAR(4) INIT('DLET'),
                                       REPLACE            CHAR(4) INIT('REPL'),
                                       THREE FIXED BINARY(31) INIT(3),
                                       FOUR  FIXED BINARY(31) INIT(4),
                                       FIVE  FIXED BINARY(31) INIT(5)) STATIC;
   4      1                   DECLARE
                                 UNLOAD FILE RECORD SEQUENTIAL OUTPUT
                                       ENVIRONMENT(VBS(3520,160)),
                                 1 MASTER STATIC,
                                   2 SEQUENCE FIXED BIN(31),
                                   2 SEGNAME CHAR(8),
                                   2 AUX CHAR(4),
                                   2 SORTCTL CHAR(82),
                                   2 DATAFLD CHAR(48),
                                 WRKAREA CHAR(142) STATIC,
                                 OV1 CHAR(120) BASED(P),
          /* COURSE FILE UNLOAD PROGRAM */                                                  PAGE

 STMT LEVEL NEST

                                   OV2 CHAR(110) BASED(P),                                      16
                                   OV3 CHAR(104) BASED(P),                                      17
                                   OV4 CHAR(115) BASED(P),                                      18
                                   OV5 CHAR(102) BASED(P),                                      19
                                   SNAMES(0:6) CHAR(8) STATIC INIT                              20
                                   ('1COURSE ','4INST   ','2RATIOS ','3RELCRS ',                21
                                    '5CLSRM  ','6STDATA ','7CMPLXGR'),                          22
                                   TESTCHAR CHAR(56) STATIC INIT                                23
                                 ('COURSE  INST    RATIOS  RELCRS  CLSRM   STDATA  CMPLXGRP'),  24
                                   P POINTER STATIC,                                            25
                                   LTEMP FIXED BIN(31) STATIC,                                  26
                                   G(0:6) LABEL;                                                27
    5     1                      P=ADDR(MASTER);                                                28
    6     1                      OPEN FILE(UNLOAD);                                             29
    7     1                      CALL PLITOLI(THREE,GET_NEXT,CRSEPCB,WRKAREA);                  30
    8     1                      DO WHILE(STATCD='  ' | STATCD='GA' | STATCD='GK');             31
    9     1     1                   LTEMP=(INDEX(TESTCHAR,SEGFU)-1)/8;                          32
   10     1     1                   SEGNAME=SNAMES(LTEMP);                                      33
   11     1     1                   GO TO G(LTEMP);                                             34
   12     1     1     G(0):         SEQUENCE=1;                                                 35
   13     1     1                   AUX=SUBSTR(WRKAREA,112,4);                                  36
   14     1     1                   SORTCTL=SUBSTR(WRKAREA,1,82);                               37
   15     1     1                   DATAFLD=SUBSTR(WRKAREA,83,48);                              38
   16     1     1                   WRITE FILE(UNLOAD) FROM(MASTER);                            39
   17     1     1                   GO TO EC;                                                   40
   18     1     1     G(1):         SUBSTR(DATAFLD,1,22)=SUBSTR(WRKAREA,1,22);                  41
   19     1     1                   WRITE FILE(UNLOAD) FROM(OV1);                               42
   20     1     1                   GO TO EC;                                                   43
   21     1     1     G(2):         SUBSTR(DATAFLD,1,12)=SUBSTR(WRKAREA,1,12);                  44
   22     1     1                   WRITE FILE(UNLOAD) FROM(OV2);                               45
   23     1     1                   GO TO EC;                                                   46
   24     1     1     G(3):         SUBSTR(DATAFLD,1,6)=SUBSTR(WRKAREA,1,6);                    47
   25     1     1                   WRITE FILE(UNLOAD) FROM(OV3);                               48
   26     1     1                   GO TO EC;                                                   49
   27     1     1     G(4):         SUBSTR(DATAFLD,1,17)=SUBSTR(WRKAREA,1,17);                  50
   28     1     1                   WRITE FILE(UNLOAD) FROM(OV4);                               51
   29     1     1                   GO TO EC;                                                   52
   30     1     1     G(5):         /* THIS IS THE SANE AS G(6) */                              53
                      G(6):         SUBSTR(DATAFLD,1,4)=SUBSTR(WRKAREA,1,4);                    54
   31     1     1                   WRITE FILE(UNLOAD) FROM(OV5);                               55
   32     1     1     EC:           SEQUENCE=SEQUENCE+1;                                        56
   33     1     1                   CALL PLITOLI(THREE,GET_NEXT,CRSEPCB,WRKAREA);               57
   34     1     1                   END;                                                        58
   35     1                      CLOSE FILE(UNLOAD);                                            59
   36     1                      RETURN;                                                        60
   37     1                      END OLITPLI;                                                   61
```

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09/17/75 AUTOFLOW CHART SET -

CHART TITLE PROCEDURE DLITPLI (CRSEPCB) OPTIONS (MAIN)

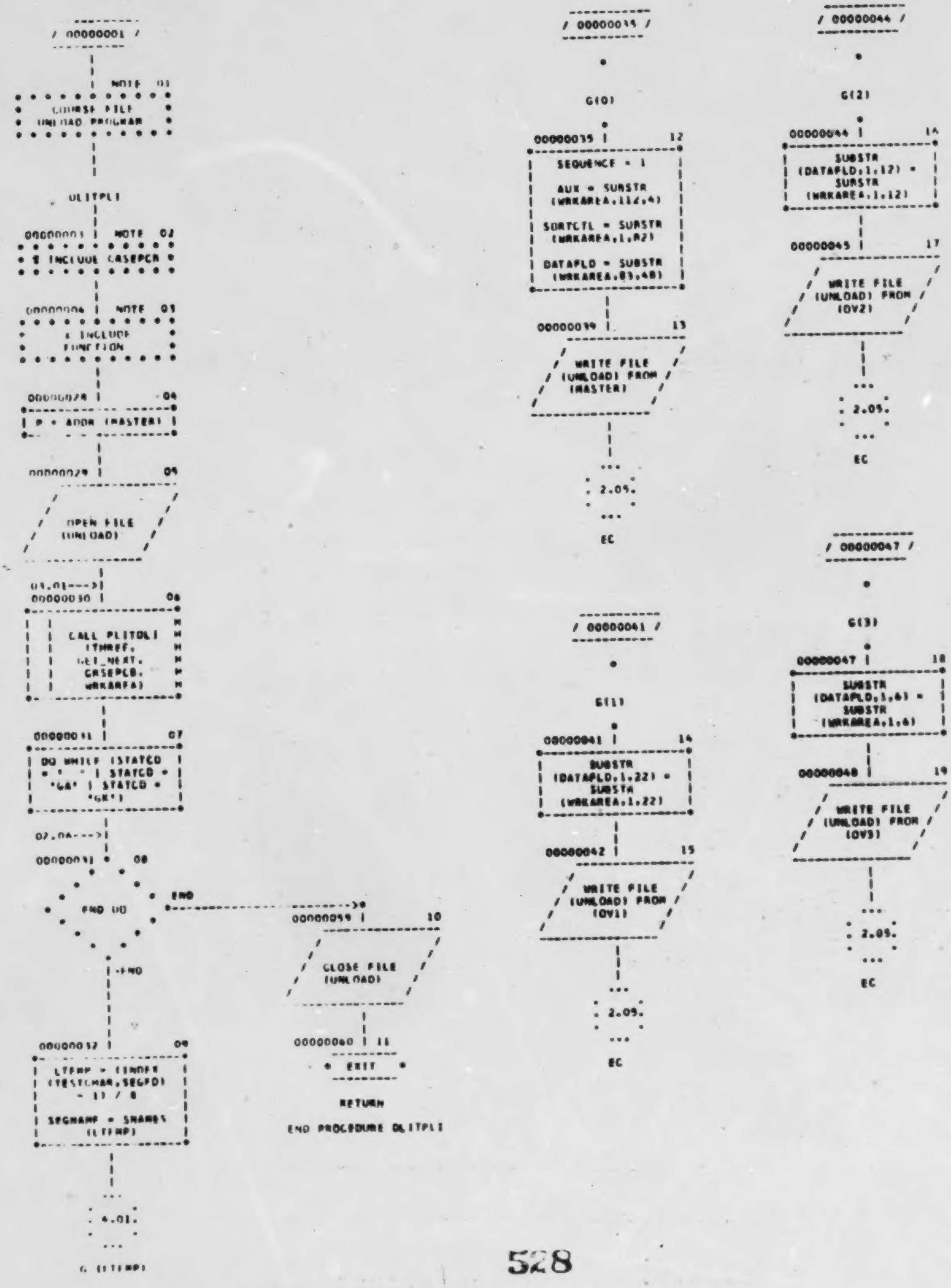
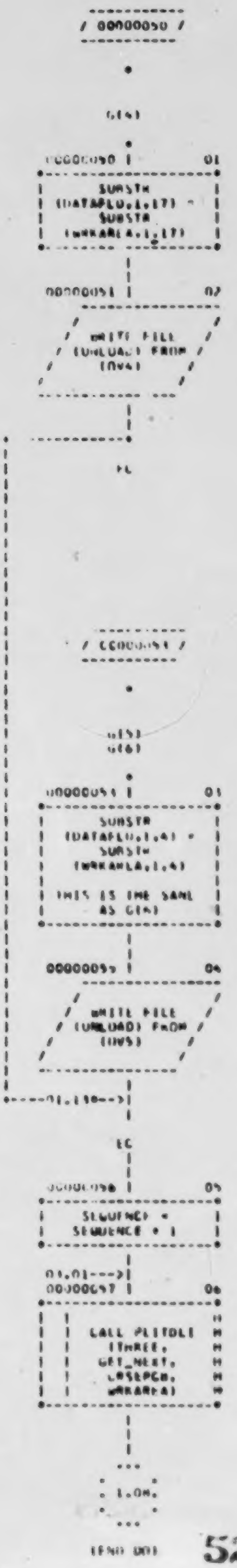

/ 00000001 /
NOTE 01
COURSE FILE UNLOAD PROGRAM
DLITPLI
00000003 NOTE 02
% INCLUDE CASEPCB
00000006 NOTE 03
% INCLUDE FUNCTION
00000028 04
P = ADDR (MASTER)
00000029 05
OPEN FILE (UNLOAD)
03.01--->
00000030 06
CALL PLITDLI (THREE, GET_NEXT, CRSEPCB, WRKAREA)
00000031 07
DO WHILE (STATCD = ' ' | STATCD = 'GA' | STATCD = 'GK')
07.08--->
00000031 08
END DO
END
-END
00000032 09
LTEMP = (INDEX (TESTCHAR,SEGPD) - 1) / 8
SEGNAME = SNAMES (LTEMP)
4.01
G (LTEMP)
00000059 10
CLOSE FILE (UNLOAD)
00000060 11
EXIT
RETURN
END PROCEDURE DLITPLI
/ 00000035 /
G(0)
00000035 12
SEQUENCE = 1
AUX = SUBSTR (WRKAREA,112,4)
SORTCTL = SUBSTR (WRKAREA,1,82)
DATAFLD = SUBSTR (WRKAREA,83,48)
00000039 13
WRITE FILE (UNLOAD) FROM (MASTER)
2.05
EC
/ 00000041 /
G(1)
00000041 14
SUBSTR (DATAFLD,1,22) = SUBSTR (WRKAREA,1,22)
00000042 15
WRITE FILE (UNLOAD) FROM (OV1)
2.05
EC
/ 00000044 /
G(2)
00000044 16
SUBSTR (DATAFLD,1,12) = SUBSTR (WRKAREA,1,12)
00000045 17
WRITE FILE (UNLOAD) FROM (OV2)
2.05
EC
/ 00000047 /
G(3)
00000047 18
SUBSTR (DATAFLD,1,6) = SUBSTR (WRKAREA,1,6)
00000048 19
WRITE FILE (UNLOAD) FROM (OV3)
2.05
EC

CHART TITLE - PROCEDURE DLITPLI (CASEPCB) OPTIONS (MAIN)


00000050
G(4)
00000050 01
SUBSTR (DATAFLD,1,17) = SUBSTR (WRKAREA,1,17)
00000051 02
WRITE FILE (UNLOAD) FROM (DV4)
FC
00000054
G(5)
G(6)
00000054 03
SUBSTR (DATAFLD,1,4) = SUBSTR (WRKAREA,1,4)
THIS IS THE SAME AS G(4)
00000055 04
WRITE FILE (UNLOAD) FROM (DV5)
01,130-->
EC
00000056 05
SEQUENCE = SEQUENCE + 1
01,01--->
00000057 06
CALL PLITDLI (THREE, GET_NEXT, CASEPCB, WRKAREA)
1.0A
(END DO)

```
                  /* SCHOOL SELECTION PROGRAM */                                                      PAGE

STMT LEVEL NEST
                                   /* SCHOOL SELECTION PROGRAM */
   1                  SELECT:      PROCEDURE OPTIONS(MAIN);
   2     1                         DECLARE
                                      INFILE FILE RECORD SEQUENTIAL INPUT
                                             ENVIRONMENT(VBS(3520,160)),
                                      IHESRTB ENTRY(CHAR(80),CHAR(80),FIXED BIN(31),
                                         FIXED BIN(31),ENTRY) RETURNS(FIXED),
                                      IHESARC ENTRY(FIXED BIN(31)) RETURNS(FIXED),
                                      (E15A,E15B) ENTRY RETURNS(CHAR(160) VARYING),
                                      SORT CHAR(80) STATIC INIT
                                      (' SORT FIELDS=(31,4,CH,A,5,4,CH,A),SIZE=E3000 '),
                                      RECORD CHAR(80) STATIC INIT
                                      (' RECORD TYPE=V,LENGTH=(160,,,102) '),
                                      DEPT CHAR(60) STATIC,
                                      QUIT_SWITCH BIT(1) STATIC ALIGNED INIT('0'B),
                                      RC FIXED BIN(31) STATIC,
                                      MASTER CHAR(160) VARYING STATIC;
   3     1                         ON ENDFILE(SYSIN) SUBSTR(DEPT,1,3)='ALL';
   5     1                         ON UNDEFINEDFILE(SYSIN) SUBSTR(DEPT,1,3)='ALL';
   7     1                         ON ENDFILE(INFILE) QUIT_SWITCH='1'B;
   9     1                         OPEN FILE(INFILE);
  10     1                         GET FILE(SYSIN) EDIT(DEPT)(A(60));
  11     1                         IF SUBSTR(DEPT,1,3)='ALL' THEN
  12     1                            CALL IHESRTB(SORT,RECORD,25000,RC,E15A);
  13     1                         ELSE CALL IHESRTB(SORT,RECORD,25000,RC,E15B);
  14     1                         CALL IHESARC(RC);
  15     1                         RETURN;

  16     1            E15A:        PROCEDURE RETURNS(CHAR(160) VARYING);
  17     2                         READ FILE(INFILE) INTO(MASTER);
  18     2                         IF QUIT_SWITCH THEN DO:
  20     2    1                       CALL IHESARC(8);
  21     2    1                       RETURN;
  22     2    1                       END;
  23     2                         CALL IHESARC(12);
  24     2                         RETURN(MASTER);
  25     2                         END E15A;

  26     1            E15B:        PROCEDURE RETURNS(CHAR(160) VARYING);
  27     2                         READ FILE(INFILE) INTO(MASTER);
  28     2                         IF QUIT_SWITCH THEN QUIT:DO;
  30     2    1                       CALL IHESARC(8);
  31     2    1                       RETURN;
  32     2    1                       END;
  33     2                         DO WHILE(MOD(INDEX(DEPT,SUBSTR(MASTER,91,6)),6)¬=1);
  34     2    1                       READ FILE(INFILE) INTO(MASTER);
  35     2    1                       IF QUIT_SWITCH THEN GO TO QUIT;
  37     2    1                       END;
  38     2                         CALL IHESARC(12);
  39     2                         RETURN(MASTER);
  40     2                         END E15B;

  41     1                         END SELECT;
```

CHART TITLE - PROCEDURE SELECT OPTIONS (MAIN)

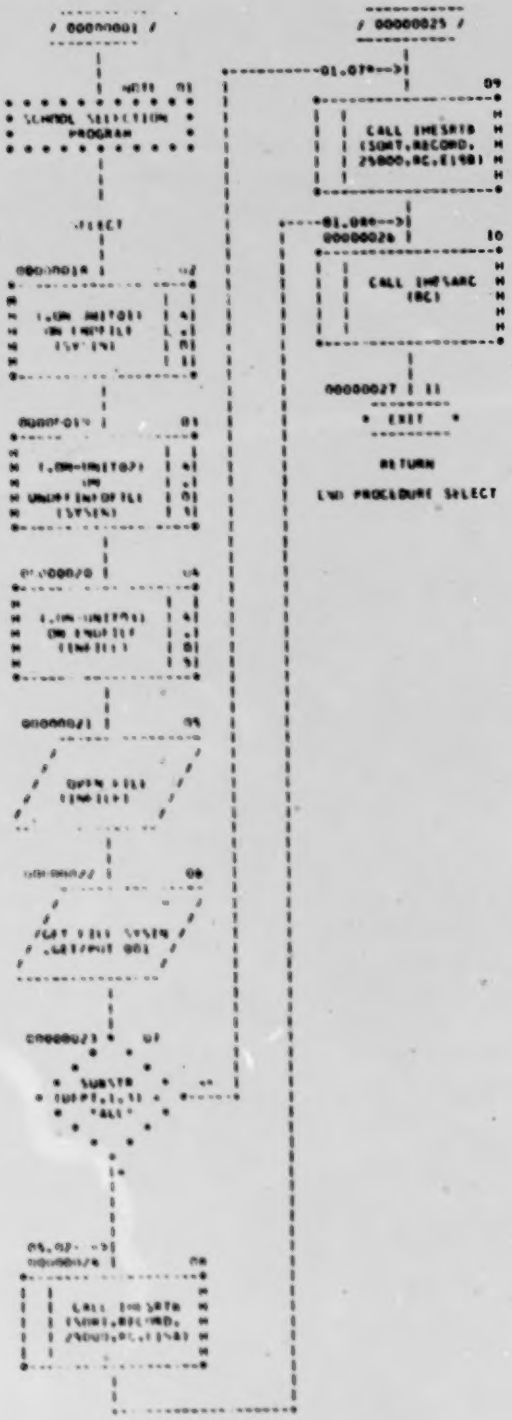

/ 00000001 /
NOTE 01
SCHOOL SELECTION PROGRAM
SELECT
00000018 02
00000019 03
00000020 04
00000021 05
OPEN FILE
00000022 06
GET FILE SYSIN
00000023 07
SUBSTR (UOPT,1,3) = 'ALL'
05,02-->
00000024 08
CALL IHESRTA (SORT,RECORD, 25000,RC,E15A)
/ 00000025 /
01,07*-->
09
CALL IHESRTB (SORT,RECORD, 25000,RC,E15B)
01,08*-->
00000026 10
CALL IHESARC (RC)
00000027 11
EXIT
RETURN
END PROCEDURE SELECT

CHART TITLE - PROCEDURE E15A RETURNS (CHAR (160) VARYING)

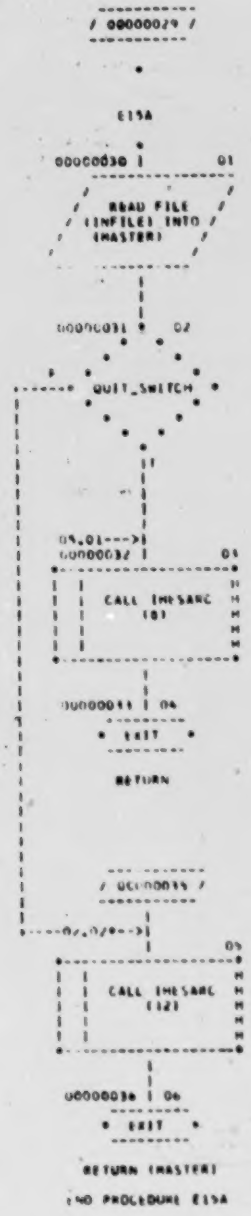

/ 00000029 /
E15A
00000030
01
READ FILE (INFILE) INTO (MASTER)
00000031
02
QUIT_SWITCH
T
03.01--->
00000032
03
CALL IHESARC (8)
00000033
04
EXIT
RETURN
/ 00000035 /
02.02/0-->
05
CALL IHESARC (12)
00000036
06
EXIT
RETURN (MASTER)
END PROCEDURE E15A

CHART TITLE - PROCEDURE E15B RETURNS (CHAR (160) VARYING)

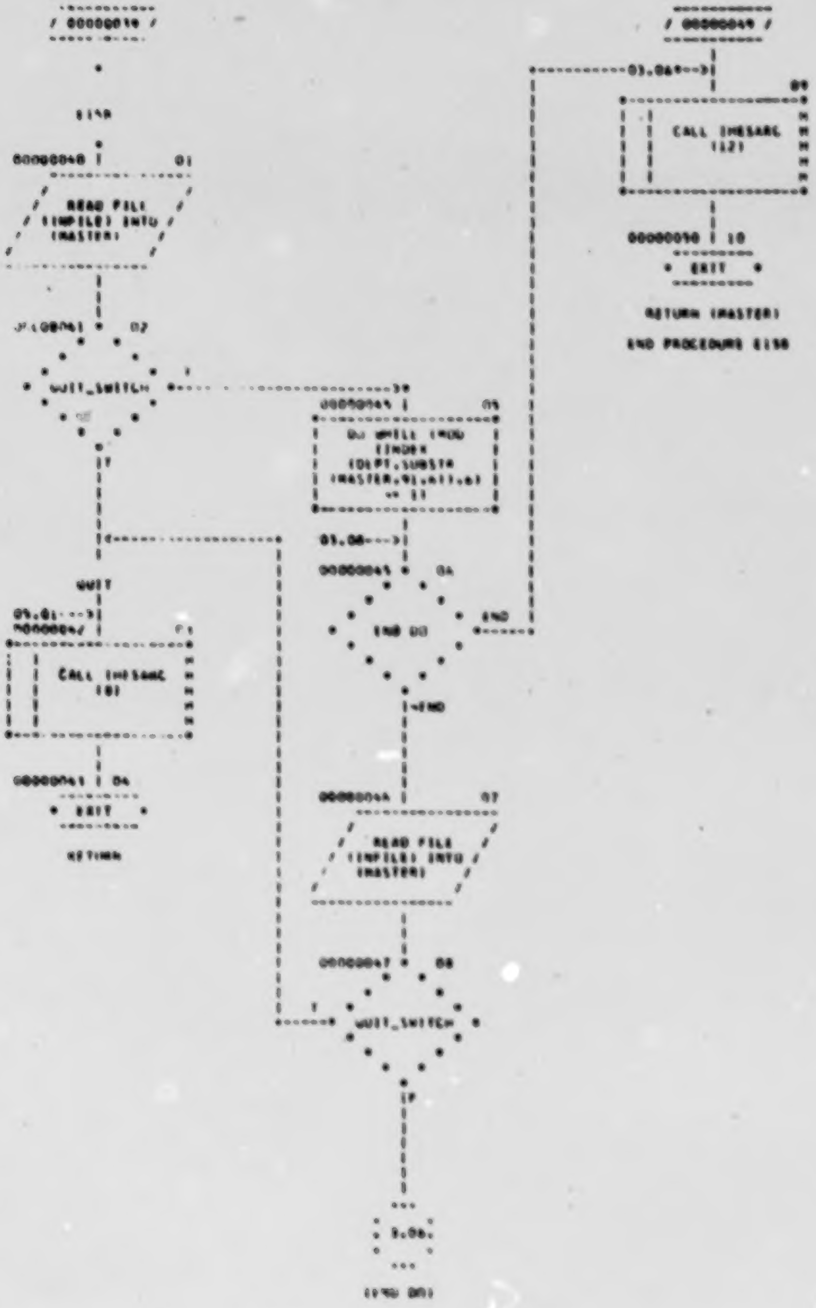
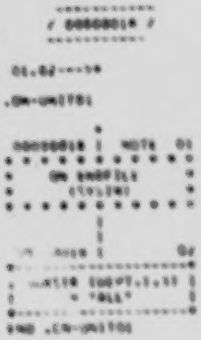
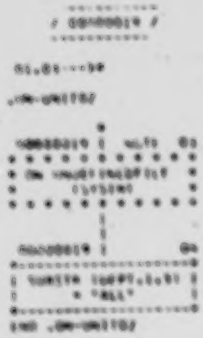
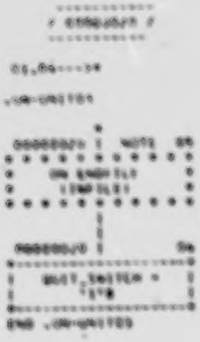

E15B
READ FILE (INFILE) INTO (MASTER)
QUIT_SWITCH
T
F
DO WHILE (MOD (INDEX (DEPT,SUBSTR (MASTER,91,#11,6) ^= 1)
END DO
END
^END
QUIT
CALL IMESARG (8)
EXIT
RETURN
READ FILE (INFILE) INTO (MASTER)
QUIT_SWITCH
(END DO)
CALL IMESARG (12)
EXIT
RETURN (MASTER)
END PROCEDURE E15B

CHART TITLE - ON-UNIT ACTION BLOCKS


ON ENDFILE
END .ON-UNIT01


END .ON-UNIT02


ON ENDFILE
END .ON-UNIT03

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```
DLITPLI:PROCEDURE(CRSEPCB) OPTIONS(MAIN);                                              PAGE

          SOURCE LISTING.

STMT LEVEL NEST
  1               DLITPLI:PROCEDURE(CRSEPCB) OPTIONS(MAIN);

                          /**************/
                          /* COURSE PCB */
                          /**************/

  2     1                 DECLARE 1 CRSEPCB,
                                    2 DBNAME CHAR(8),
                                    2 LEVFD CHAR(2),
                                    2 STATCD CHAR(2),
                                    2 PROCOPT CHAR(4),
                                    2 JCBADDR POINTER,
                                    2 SEGFD CHAR(8),
                                    2 KEYLEN FIXED BIN(31),
                                    2 NOSS FIXED BIN(31),
                                    2 KEYFD CHAR(12),
                                    2 SN1 CHAR(8),
                                    2 SN2 CHAR(8),
                                    2 SN3 CHAR(8),
                                    2 SN4 CHAR(8),
                                    2 SN5 CHAR(8),
                                    2 SN6 CHAR(8),
                                    2 SN7 CHAR(8);

                          /**********************/
                          /* COURSE SEGMENT SSA */
                          /**********************/

  3     1                 DECLARE
                             1 SSA1 STATIC,
                               2 SEGMENT CHAR(8) INIT('COURSE  '),
                               2 LP CHAR(1) INIT('('),
                               2 FIELD CHAR(8) INIT('CRSNO   '),
                               2 RO CHAR(2) INIT(' ='),
                               2 KEY CHAR(4),
                               2 RP CHAR(1) INIT(')'),
                             1 SSA2 STATIC,
                               2 SEGMENT CHAR(8),
                               2 LP CHAR(1) INIT('('),
                               2 FIELD CHAR(8),
                               2 RO CHAR(2) INIT(' ='),
                               2 KEY CHAR(8),
                               2 RP CHAR(1) INIT(')');

                          /******************/
                          /* FUNCTION CODES */
                          /******************/

  4     1                 DECLARE (GET_UNIQUE        CHAR(4) INIT('GU  '),
                                   GET_NEXT          CHAR(4) INIT('GN  '),
          DLITPLI:PROCEDURE(CRSEPCB) OPTIONS(MAIN);                                              PAGE

STMT LEVEL NEST

                                   GET_NEXT_WP         CHAR(4) INIT('GNP '),
                                   GET_HOLD_UNIQUE     CHAR(4) INIT('GHU '),
                                   GET_HOLD_NEXT       CHAR(4) INIT('GHN '),
                                   GET_HOLD_NEXT_WP    CHAR(4) INIT('GHNP'),
                                   INSERT              CHAR(4) INIT('ISRT'),
                                   DELETE              CHAR(4) INIT('DLET'),
                                   REPLACE             CHAR(4) INIT('REPL'),
                                   THREE FIXED BINARY(31) INIT(3),
                                   FOUR  FIXED BINARY(31) INIT(4),
                                   FIVE  FIXED BINARY(31) INIT(5)) STATIC;
  5     1                     DECLARE
                                 UNLOAD FILE RECORD SEQUENTIAL INPUT
                                       ENVIRONMENT(VBS(3520,160)),
                                 MASTER CHAR(160) VARYING STATIC,
                                 1 CONTROL BASED(P),
                                    2 SEQUENCE CHAR(4),
                                    2 SEGNAME CHAR(8),
                                    2 AUX CHAR(4),
                                    2 COURSE,

                                       3 SORTCTL CHAR(82),
                                       3 DATAFLD CHAR(48),
                                 OV0 CHAR(130) BASED(Z),
                                 (OV1 CHAR(22),
                                 OV2 CHAR(12),
                                 OV3 CHAR(6),
                                 OV4 CHAR(17),
                                 OV5 CHAR(4),
                                 OV6 CHAR(4)) BASED(Q),
                                 TSTCHAR CHAR(49) STATIC INIT
                                    ('COURSE INST   RATIOS RELCRS CLSRM  STDATA CMPLXGR'),
                                 (P,Q) POINTER STATIC,
                                 NOT_EOF BIT(1) ALIGNED STATIC INIT('1'B),
                                 G(0:6) LABEL,
                                 (ABEND,IHESARC) ENTRY(FIXED BIN(31)) RETURNS(FIXED),
                                 SEG FIXED BIN(16) STATIC;
  6     1                     P=ADDR(MASTER);
  7     1                     Q=ADDR(DATAFLD);
  8     1                     Z=ADDR(SORTCTL);
  9     1                     ON ENDFILE(UNLOAD) NOT_EOF='0'B;
 11     1                     OPEN FILE(UNLOAD),FILE(SYSPRINT);
 12     1                     READ FILE(UNLOAD) INTO(MASTER);
 13     1                     DO WHILE(NOT_EOF);
 14     1     1                  SEG=(INDEX(TSTCHAR,SUBSTR(SEGNAME,2,7))-1)/7;
 15     1     1                  GO TO G(SEG);
 16     1     1      G(0):       /* COURSE PARENT SEGMENT */
                                 SSA1.KEY=SUBSTR(SORTCTL,11,4);
 17     1     1                  CALL PLITDLI(FOUR,INSERT,CRSEPCB,OV0,'COURSE   ');
 18     1     1                  GO TO EC;
 19     1     1      G(1):       /* INSTRUCTOR SEGMENT */
                                 CALL PLITDLI(FIVE,INSERT,CRSEPCB,OV1,SSA1,'INST     ');
 20     1     1                  GO TO EC;
 21     1     1      G(2):    /* RATIOS SEGMENT */
                                 CALL PLITDLI(FIVE,INSERT,CRSEPCB,OV2,SSA1,'RATIOS   ');
 22     1     1                  GO TO EC;
```

```
             DLITPLI:PROCEDURE(CRSEPCB) OPTIONS(MAIN);                                                     PAGE

 STMT LEVEL NEST

  23     1    1    G(3):      /* RELATED COURSES SEGMENT */                                       48
                              CALL PLITDLI(FIVE,INSERT,CRSEPCB,OV3,SSA1,'RELCRS   ');            49
  24     1    1               GO TO EC;                                                           50
  25     1    1    G(4):         /* CLASSROOM SEGMENT */                                          51
                              CALL PLITDLI(FIVE,INSERT,CRSEPCB,OV4,SSA1,'CLSRM    ');            52
  26     1    1               GO TO EC;                                                           53
  27     1    1    G(5):      /* TPF MODEL STUDENT DATA SEGMENT */                                54
                              CALL PLITDLI(FIVE,INSERT,CRSEPCB,OV5,SSA1,'STDATA   ');            55
  28     1    1               GO TO EC;                                                           56
  29     1    1    G(6):      /* TPF MODEL COURSE CHARACTERISTICS SEGMENT */                      57
                                 CALL PLITDLI(FIVE,INSERT,CRSEPCB,OV6,SSA1,'CMPLXGR ');          58
  30     1    1    EC:        IF STATCD¬=' ' THEN DO;                                             59
  32     1    2                  PUT FILE(SYSPRINT) EDIT('LOADING ERROR - TYPE=',STATCD)          60
                                    (A);                                                          61
  33     1    2                  PUT FILE(SYSPRINT) SKIP(2) DATA(MASTER);                         62
  34     1    2                  END;                                                             63
  35     1    1               READ FILE(UNLOAD) INTO(MASTER);                                     64
  36     1    1               END;                                                                65
  37     1                 PUT FILE(SYSPRINT) EDIT('LOADING COMPLETED')(A);                       66
  38     1                 CALL IHESARC(0);                                                       67
  39     1                 RETURN;                                                                68
  40     1                 END DLITPLI;                                                           69
```

CHART TITLE - PROCEDURE DLITPLI (CRSEMPT) OPTIONS (MAIN)

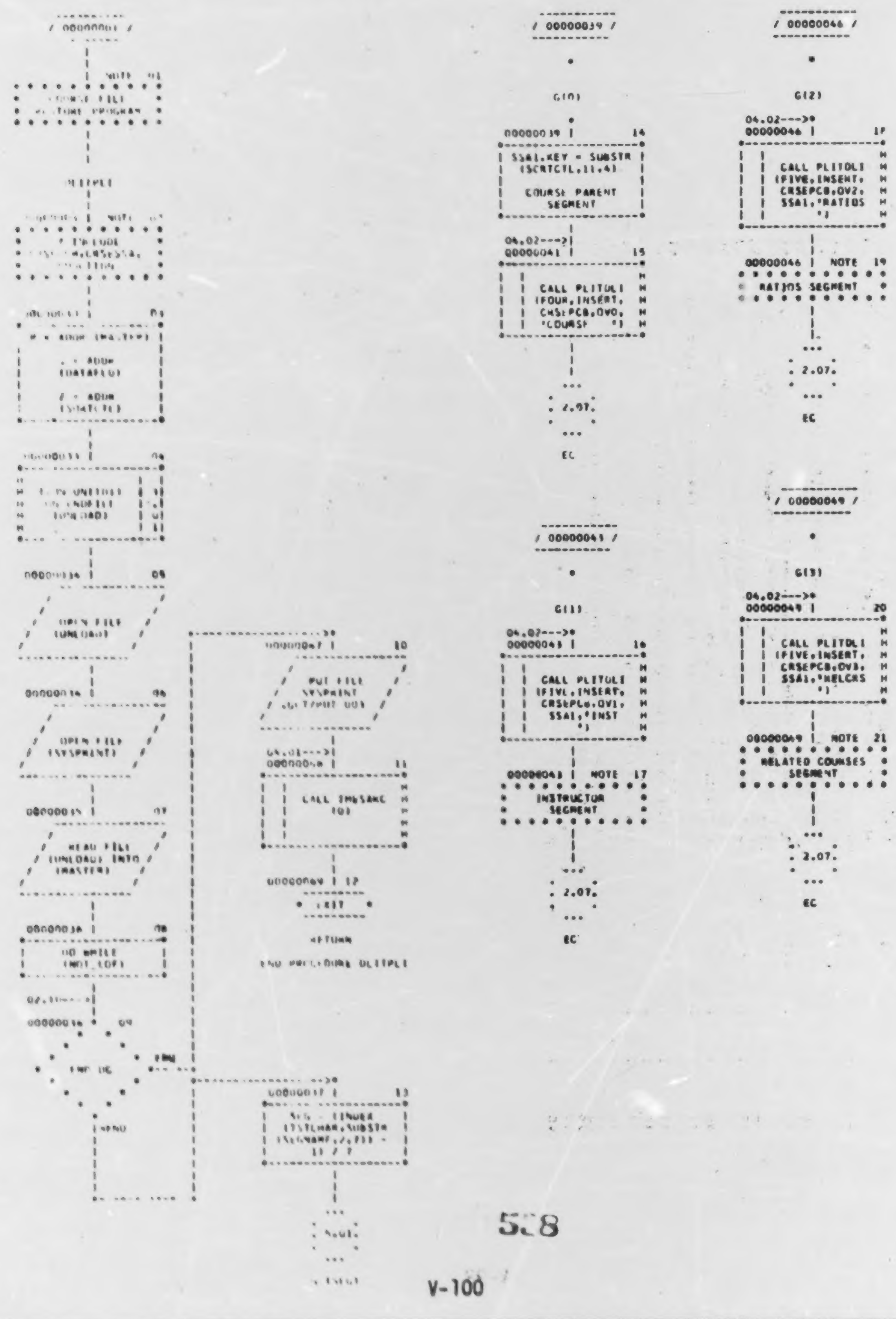
/ 00000001 /
NOTE 01
OPEN FILE
(UNLOAD)
OPEN FILE
(SYSPRINT)
READ FILE
(UNLOAD) INTO
(MASTER)
DO WHILE
(NOT_EOF)
END DO
PUT FILE
SYSPRINT
CALL IMSDATE
EXIT
RETURN
END PROCEDURE DLITPLI
/ 00000039 /
G(0)
SSA1.KEY = SUBSTR
(SCRTCTL,11,4)
COURSE PARENT
SEGMENT
CALL PLITDLI
(FOUR,INSERT,
CRSEPCB,OVO,
'COURSE ')
2.07.
EC
/ 00000043 /
G(1)
CALL PLITDLI
(FIVE,INSERT,
CRSEPCB,OV1,
SSA1,'INST
')
NOTE 17
INSTRUCTOR
SEGMENT
2.07.
EC
/ 00000046 /
G(2)
CALL PLITDLI
(FIVE,INSERT,
CRSEPCB,OV2,
SSA1,'RATIOS
')
NOTE 19
RATIOS SEGMENT
2.07.
EC
/ 00000049 /
G(3)
CALL PLITDLI
(FIVE,INSERT,
CRSEPCB,OV3,
SSA1,'RELCRS
')
NOTE 21
RELATED COURSES
SEGMENT
2.07.
EC

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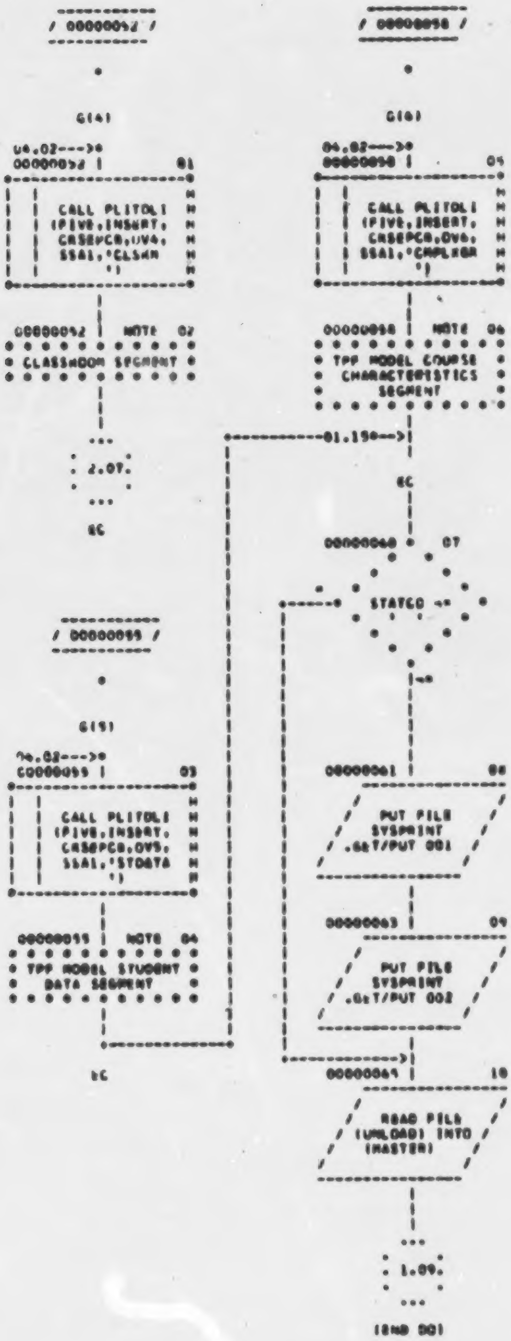
CHART TITLE - PROCEDURE BLITPLI (CRSEPCG) OPTIONS (MAIN)


/ 00000052 /
G(4)
04.02--->
00000052 01
CALL PLITDLI (FIVE,INSERT, CRSEPCG,OV4, SSA1,'CLSRM ')
00000052 NOTE 02
CLASSROOM SEGMENT
2.07.
EC
/ 00000055 /
G(5)
04.02--->
00000055 03
CALL PLITDLI (FIVE,INSERT, CRSEPCG,OV5, SSA1,'STDATA ')
00000055 NOTE 04
TPP MODEL STUDENT DATA SEGMENT
EC
/ 00000058 /
G(6)
04.02--->
00000058 05
CALL PLITDLI (FIVE,INSERT, CRSEPCG,OV6, SSA1,'CMPLXGR ')
00000058 NOTE 06
TPP MODEL COURSE CHARACTERISTICS SEGMENT
01.15--->
EC
00000060 07
STATCD -=
-=
00000061 08
PUT FILE SYSPRINT .GET/PUT 001
00000063 09
PUT FILE SYSPRINT .GET/PUT 002
00000065 10
READ FILE (UNLOAD) INTO (MASTER)
1.09.
(END DO)

```
09/17/79                          AUTOFLOW CHART SET -                                   PAGE 03

CHART TITLE - ON-UNIT ACTION BLOCKS


                                  -----------
                                 / 00000033 /
                                 -----------

                                01.04--->*

                               .ON-UNIT01

                                          *
                                00000033 |  NOTE  01
                               * * * * * * * * * * *
                               *    ON ENDFILE       *
                               *     (UNLOAD)        *
                               * * * * * * * * * * *
                                         |
                                         |
                                00000033 |          02
                               *---------------------*
                               |  NOT_EOF = '0'B     |
                               *---------------------*
                               END .ON-UNIT01
```

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```
/* UNLOADED COURSE FILE PRINT PROGRAM */                                                                PAGE

SOURCE LISTING.

STMT LEVEL NEST
                                    /* UNLOADED COURSE FILE PRINT PROGRAM */                        1
  1                       CRSELST: PROCEDURE OPTIONS(MAIN);                                         2
                                                                                                  200
                                    /**********************************************/              201
                                    /* THIS SET OF DECLARATIONS DESCRIBES EACH */                 202
                                    /* OF THE SEGMENTS IN THE COURSE DATA BASE */                 203
                                    /**********************************************/              204
                                                                                                  205
                                    DECLARE                                                       206
  2     1                              1 COURSE BASED(P1),                                        207
                                         2 PREFIX CHAR(10),                                       208
                                         2 CRSNO CHAR(4),                                         209
                                         2 CRSNAME CHAR(63),                                      210
                                         2 DEPT CHAR(6),                                          211
                                         2 LENGTH FIXED DEC(3,1),                                 212
                                         2 QUALTIME FIXED DEC(3,1),                               213
                                         2 BUPCAP FIXED DEC(3,0),                                 214
                                         2 INSTCAP FIXED DEC(3,0),                                215
                                         2 CRSTYPE FIXED DEC(1,0),                                216
                                         2 MINCON FIXED DEC(3,0),                                 217
                                         2 CHNGDATE FIXED DEC(5,0),                               218
                                         2 OFFSET FIXED DEC(5,0),                                 219
                                         2 NBUPCAP FIXED DEC(3,0),                                220
                                         2 NINSTCAP FIXED DEC(3,0),                               221
                                         2 NMINCON FIXED DEC(3,0),                                222
                                         2 NLENGTH FIXED DEC(3,1),                                223
                                         2 NECAWARD CHAR(4),                                      224
                                         2 WAIT FIXED DEC(3,0),                                   225
                                         2 JNO CHAR(4),                                           226
                                         2 TPF1(2) FIXED DEC(5,0),                                227
                                         2 TPF2(3) FIXED DEC(5,1),                                228
                                       1 INST BASED(P1),                                          229
                                         2 INSTNO FIXED DEC(3,0),                                 230
                                         2 INSTNAME CHAR(15),                                     231
                                         2 PERQUAL FIXED DEC(3,0),                                232
                                         2 CURR BIT(1) ALIGNED,                                   233
                                         2 INGRP FIXED DEC(3,0),                                  234
                                       1 RATIOS BASED(P1),                                        235
                                         2 INDEX FIXED DEC(3,0),                                  236
                                         2 RATIO FIXED DEC(3,1),                                  237
                                         2 NUMINST FIXED DEC(3,0),                                238
                                         2 CONTHRS FIXED DEC(5,1),                                239
                                         2 TYPE FIXED DEC(1,0),                                   240
                                         2 RATGRP FIXED DEC(3,0),                                 241
                                       1 RELCRS BASED(P1),                                        242
                                         2 REL CHAR(4),                                           243
                                         2 RELGRP CHAR(2),                                        244
                                       1 CLSRM BASED(P1),                                         245
                                         2 BLDG CHAR(5),                                          246
                                         2 ROOM CHAR(3),                                          247
                                         2 RMCAP FIXED DEC(3,0),                                  248
                                         2 RMTYPE FIXED DEC(1,0),                                 249
```

```
                /* UNLOADED COURSE FILE PRINT PROGRAM */                                                 PAGE

STMT LEVEL NEST

                                2 REQHRS FIXED DEC(5,1),                                   250
                                2 AVAILHRS FIXED DEC(5,0),                                 251
                              1 STDATA BASED(P1),                                          252
                                2 TYPE FIXED DEC(3,0),                                     253
                                2 FACTOR FIXED DEC(3,0),                                   254
                              1 CMPLXGRP BASED(P1),                                        255
                                2 TYPE FIXED DEC(3,0),                                     256
                                2 FACTOR FIXED DEC(3,0);                                   257
  3     1                  DECLARE                                                           4
                              IHEDUMP ENTRY RETURNS(FIXED BIN(31)),                          5
                              IHESARC ENTRY(FIXED BIN(31)) RETURNS(FIXED BIN(31)),           6
                              IHESRTC ENTRY(CHAR(80),CHAR(80),FIXED BIN(31),                 7
                                             FIXED BIN(31),ENTRY) RETURNS(FIXED BIN(31)),    8
                              PARM CHAR(6),                                                  9
                              RC FIXED BIN(31),                                             10
                              S1 INIT                                                       11
                  (' SORT FIELDS=(95,6,CH,A,31,4,CH,A,9,1,CH,A,5,4,CH,A),SIZE=E3000 '),     12
                              S2 INIT                                                       13
                  (' SORT FIELLS=(31,4,CH,A,9,1,CH,A,5,4,CH,A),SIZE=F3000 '),               14
                              S3 INIT                                                       15
                  (' SORT FIFLUS=(21,10,CH,A,9,1,CH,A,5,4,CH,A),SIZE=F3000 '),              16
                              S4 INIT                                                       17
                  (' SORT FIFLUS=(35,60,CH,A,9,1,CH,A,5,4,CH,A),SIZE=E3000 '),              18
                              S5 INIT                                                       19
                  (' SORT FIELDS=(101,2,PD,A,27,4,CH,A,9,1,CH,A,5,4,CH,A),SIZE=E3000 '),    20
                              RFLD INIT                                                     21
                           (' RECORD TYPE=V,LENGTH=(160,,,102) '),                          22
                              SFLD) STATIC CHAR(80),                                        23
                              ASF CHAR(3),                                                  24
                              (HDR,LNE) FIXED BIN(31) STATIC INIT(0),                       25
                              LTEMP FIXED BIN(31) STATIC,                                   26
                              PAGENO FIXED BIN(31) STATIC INIT(1),                          27
                              TDTE CHAR(6) STATIC,                                          28
                              DTE CHAR(8) STATIC INIT('  /  /  '),                          29
                              TSTCHAR CHAR(64) STATIC INIT                                  30
                  ('COURSE  INST    RATIOS  RELCRS  CLSRM   STDATA  CMPLXGRP'),             31
                              RAT(2) CHAR(6) STATIC INIT('THEORY','  LAB '),                32
                              RMT(3) CHAR(7) STATIC INIT('  LAB  ','LECTURE','  BOTH '),    33
                              CRT(4) CHAR(4) STATIC INIT('ILS ','CAI ','TEAM','LOCK');      34
  4     1                  ON ERROR SNAP CALL IHEDUMP;                                      35
  6     1                  ON ENDPAGE(SYSPRINT) BEGIN;                                      36
  8     2                     LNE=3;                                                        37
  9     2                     PUT FILE(SYSPRINT) PAGE EDIT                                  38
                                 (DTE,'DOTS SUPPORT UTILITY---COURSE FILE LISTING',         39
                                  'PAGE',PAGENO)(A(8),COL(20),A,COL(73),A(4),F(4));         40
 10     2                     PUT FILE(SYSPRINT) SKIP(2);                                   41
 11     2                     PAGENO=PAGENO+1;                                              42
 12     2                     END;                                                          43
 13     1                  ON ENDFILE(SYSIN) BEGIN;                                         44
 15     2                     SFLD=S1;                                                      45
 16     2                     GO TO SORT;                                                   46
 17     2                     END;                                                          47
 18     1                  ON UNDEFINEDFILE(SYSIN) BEGIN;                                   48
 20     2                     SFLD=S1;                                                      49
 21     2                     GO TO SORT;                                                   50
```

```
                 /* UNLOADED COURSE FILE PRINT PROGRAM */                                              PAGE

STMT LEVEL NEST

 22     2                    END;

 23     1                 TDTE=DATE;
 24     1                 SUBSTR(DTE,1,2)=SUBSTR(TDTE,3,2);
 25     1                 SUBSTR(DTE,4,2)=SUBSTR(TDTE,5,2);
 26     1                 SUBSTR(DTE,7,2)=SUBSTR(TDTE,1,2);
 27     1                 OPEN FILE(SYSPRINT) PAGESIZE(65);
 28     1                 SIGNAL ENDPAGE(SYSPRINT);
 29     1                 GET FILE(SYSIN) EDIT(PARM)(A(6));
 30     1                 IF PARM='DEPT  ' THEN SFLD=S1;
 32     1                    ELSE IF PARM='CDP   ' THEN SFLD=S2;
 34     1                    ELSE IF PARM='NUMBER' THEN SFLD=S3;
 36     1                    ELSE IF PARM='NAME  ' THEN SFLD=S4;
 38     1                    ELSE IF PARM='LENGTH' THEN SFLD=S5;
 40     1                    ELSE IF PARM='USER  ' THEN
 41     1                       GET FILE(SYSIN) SKIP EDIT(SFLD)(A(80));
 42     1                    ELSE SFLD=S1;
 43     1         SORT:   CALL IHESRTC(SFLD,RFLD,25000,RC,E35);
 44     1                 IF RC¬=0 THEN PUT FILE(SYSPRINT) SKIP EDIT('SORT FAILED')(A);
 46     1                 STOP;

                          /* E35 EXIT TO PRINT SORTED FILE */

 47     1         E35:    PROCEDURE(INVAR);
 48     2                 DECLARE
                             INVAR CHAR(146) VARYING,
                             1 MASTER BASED(Q),
                               2 SEQUENCE CHAR(4),
                               2 SEGFD CHAR(8),
                               2 AUX CHAR(4),
                               2 SORTCTL CHAR(82),
                               2 DATAFLD CHAR(48),
                             G(0:6) LABEL,
                             Q POINTER STATIC;
 49     2                 Q=ADDR(INVAR);
 50     2                 P1=ADDR(DATAFLD);
                          /* ISOLATE THIS BLOCK TO USE INDEX AS A BUILTIN FUNCTION */
 51     2                 BEGIN;
 52     3                 DECLARE INDEX BUILTIN;
 53     3                 LTEMP=(INDEX(TSTCHAR,SUBSTR(SEGFD,2,7))-1)/8;
 54     3                 END;
 55     2                 GO TO G(LTEMP);

 56     2         G(0):   /* PRINT COURSE MAJOR SEGMENT */
                          P1=ADDR(SORTCTL);
 57     2                 IF LNE>48 THEN SIGNAL ENDPAGE(SYSPRINT);
 59     2                 PUT FILE(SYSPRINT) SKIP(2) EDIT
                          (JNO,(18)'*','COURSE NUMBER=',PREFIX,'----CDP=',CRSNO,(22)'*')
                             (A(4),A(18),A(14),A(10),A(8),A(4),A(22))
                             ((24)'-','COURSE  NAME',(24)'-',' DEPT   NEC   TYPE')
                             (SKIP,A(24),A(12),A(24),A(19))
                             (CRSNAME,DEPT,NECAWARD,CRT(CRSTYPE))
                             (SKIP,A(60),X(1),A(6),(2)(X(2),A(4)))
                             ((9)'-','CURRENT',(28)'-','FUTURE',(10)'-',
                             ' QUAL    BACK      CONV  LEN    QUOTAS',
                /* UNLOADED COURSE FILE PRINT PROGRAM */                                    PAGE

STMT LEVEL NEST
                                     '    CHNG OFF     QUOTAS      LEN   CONV',
                                     '  TIME      LOG       PER YR  WKS  BUPRS  CLASS',
                                     ' DATE SET BUPRS  CLASS  WKS  PER YR')
                                     (SKIP(2),X(20),A(9),A(7),A(26),A(6),A(10),
                                     SKIP,A(42),A(37),SKIP,A(45),A(35))
                                     (QUALTIME,' WKS',WAIT,' WKS',MINCON,LENGTH,BUPCAP,
                                     INSTCAP,CHNGDATE,OFFSET,NBUPCAP,NINSTCAP,NLENGTH,NMINCON)
                                     (SKIP,F(4,1),A(4),F(5),A(4),F(8),F(6,1),F(6),F(7),
                                     F(5),F(4),F(6),F(7),F(6,1),F(7))
                                     ('TPF FIELDS: BUPERS   ANNUAL    PCT     PCT          PCT',
                                      'DEMAND   DEMAND   UTIL   NOSHOW   NONACDIS')
                                     (SKIP(2),X(5),A(52),SKIP,X(17),A(42))(TPF1,TPF2)
                                     (SKIP,X(17),F(5),F(9),F(8,1),F(8,1),F(10,1));
 60      2                        HDR=0; LNE=LNE+12;
 62      2                        GO TO EC;
 63      2              G(1):     /* INSTRUCTOR SEGMENT */
 64      2                        IF HDR¬=1 THEN DO;
 65      2     1                     IF LNE>57 THEN SIGNAL ENDPAGE(SYSPRINT);
 67      2     1                     PUT FILE(SYSPRINT) SKIP(2) EDIT('INSTRUCTORS:',
                                        'NUMBER   NAME','QUAL   ASSIGNED?   GROUP')
                                        (X(5),A(12),X(3),A(13),COL(48),A(25));
 68      2     1                     HDR=1; LNE=LNE+2;
 70      2     1                     END;
 71      2                        IF LNE>59 THEN SIGNAL ENDPAGE(SYSPRINT);
 73      2                        IF CURR THEN ASF='YES'; ELSE ASF='NO ';
 76      2                        PUT FILE(SYSPRINT) SKIP EDIT
                                     (INSTNO,INSTNAME,PFRQUAL,ASF,INGRP)
                                     (X(21),F(3),X(5),A(15),X(3),F(4),X(6),A(3),F(10));
 77      2                        LNE=LNE+1;
 78      2                        GO TU EC;

 79      2              G(2):     /* RATIOS SEGMENT */
 80      2                        IF HDR¬=2 THEN DO;
 81      2     1                     IF LNE>57 THEN SIGNAL ENDPAGE(SYSPRINT);
 83      2     1                     PUT FILE(SYSPRINT) SKIP(2) EDIT
                                        ('INDEX   RATIO   #INSTRS   HOURS   TYPE   GROUP')(A);
 84      2     1                     HDR=2; LNE=LNE+2;
 86      2     1                     END;
 87      2                        IF LNE>59 THEN SIGNAL ENDPAGE(SYSPRINT);
 89      2                        PUT FILE(SYSPRINT) SKIP EDIT
                                     (INDEX,RATIO,NUMINST,CONTHRS,RAT(RATIOS.TYPE),RATGRP)
                                     (F(3),F(10,1),F(8),F(10,1),X(2),A(6),F(5));
 90      2                        LNE=LNE+1;
 91      2                        GO TO EC;
 92      2              G(3):     /* RELATED COURSE SEGMENT */
 93      2                        IF HDR¬=3 THEN DO;
 94      2     1                     IF LNE>57 THEN SIGNAL ENDPAGE(SYSPRINT);
 96      2     1                     PUT FILE(SYSPRINT) SKIP(2) EDIT
                                        ('RELATED COURSES: CDP    GROUP')(X(5),A(28));
 97      2     1                     HDR=3; LNE=LNE+2;
 99      2     1                     END;
100      2                        IF LNE>59 THEN SIGNAL ENDPAGE(SYSPRINT);
102      2                        PUT FILE(SYSPRINT) SKIP EDIT(RELCRS)(X(21),A(4),X(4),A(2));
103      2                        LNE=LNE+1;
104      2                        GO TO EC;
```

```
        /* UNLOADED COURSE FILE PRINT PROGRAM */                                    PAGE

STMT LEVEL NEST

105    2          G(4):   /* CLASSROOM SEGMENT */
106    2                  IF HDR¬=4 THEN DO;
107    2     1               IF LNE>57 THEN SIGNAL ENDPAGE(SYSPRINT);
109    2     1               PUT FILE(SYSPRINT) SKIP(2) EDIT
                                ('CLASSROOMS:   BUILDING   ROOM   CAPACITY   TYPE',
                             'REQUIRED   AVAILABLE')(X(5),A(47),X(3),A(20));
110    2     1               HDR=4; LNE=LNE+2;
112    2     1               END;
113    2                  IF LNE>59 THEN SIGNAL ENDPAGE(SYSPRINT);
115    2                  PUT FILE(SYSPRINT) SKIP EDIT(BLDG,ROOM,RMCAP,RMT(RMTYPE),
                             REQHRS,AVAILHRS)(X(20),A(5),X(5),A(4),F(8),X(4),A(7),
                             F(8,1),F(12));
116    2                  LNE=LNE+1;
117    2                  GO TO EC;
118    2          G(5):   /* STUDENT FACTOR SEGMENT */
119    2                  IF HDR¬=5 THEN DO;
120    2     1               IF LNE>57 THEN SIGNAL ENDPAGE(SYSPRINT);
122    2     1               PUT FILE(SYSPRINT) SKIP(2) EDIT
                                ('STUDENT FACTORS:ITEM   FACTOR')(X(5),A(29));
123    2     1               HDR=5; LNE=LNE+2;
125    2     1               END;
126    2                  IF LNE>59 THEN SIGNAL ENDPAGE(SYSPRINT);
128    2                  PUT FILE(SYSPRINT) SKIP EDIT(STDATA)(X(21),F(3),F(9));
129    2                  LNE=LNE+1;
130    2                  GO TO EC;
131    2          G(6):   /* COURSE COMPLEXITY SEGMENT */
132    2                  IF HDR¬=6 THEN DO;
133    2     1               IF LNE>57 THEN SIGNAL ENDPAGE(SYSPRINT);
135    2     1               PUT FILE(SYSPRINT) SKIP(2) EDIT
                                ('COMPLEXITY RATE:ITEM   FACTOR')(X(5),A(27));
136    2     1               HDR=6; LNE=LNE+2;
138    2     1               END;
139    2                  IF LNE>59 THEN SIGNAL ENDPAGE(SYSPRINT);
141    2                  PUT FILE(SYSPRINT) SKIP EDIT(CMPLXGRP)(X(21),F(3),F(9));
142    2                  LNE=LNE+1;
143    2          EC:     CALL IHESARC(4);
144    2                  RETURN;
145    2                  END E35;
146    1                  END CRSELST;
```

CHART TITLE PROCEDURE CASFLST OPTIONS (MAIN)

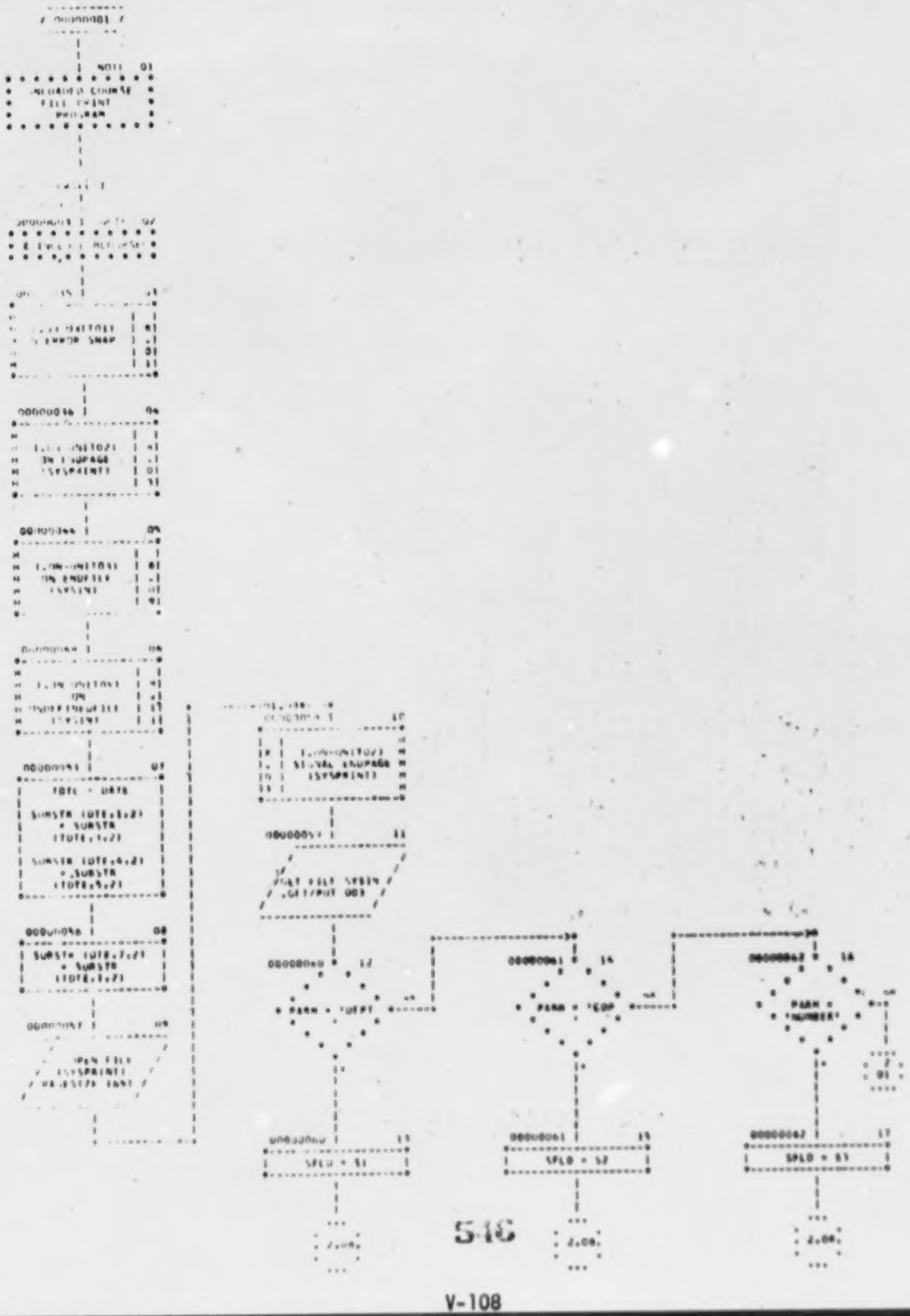
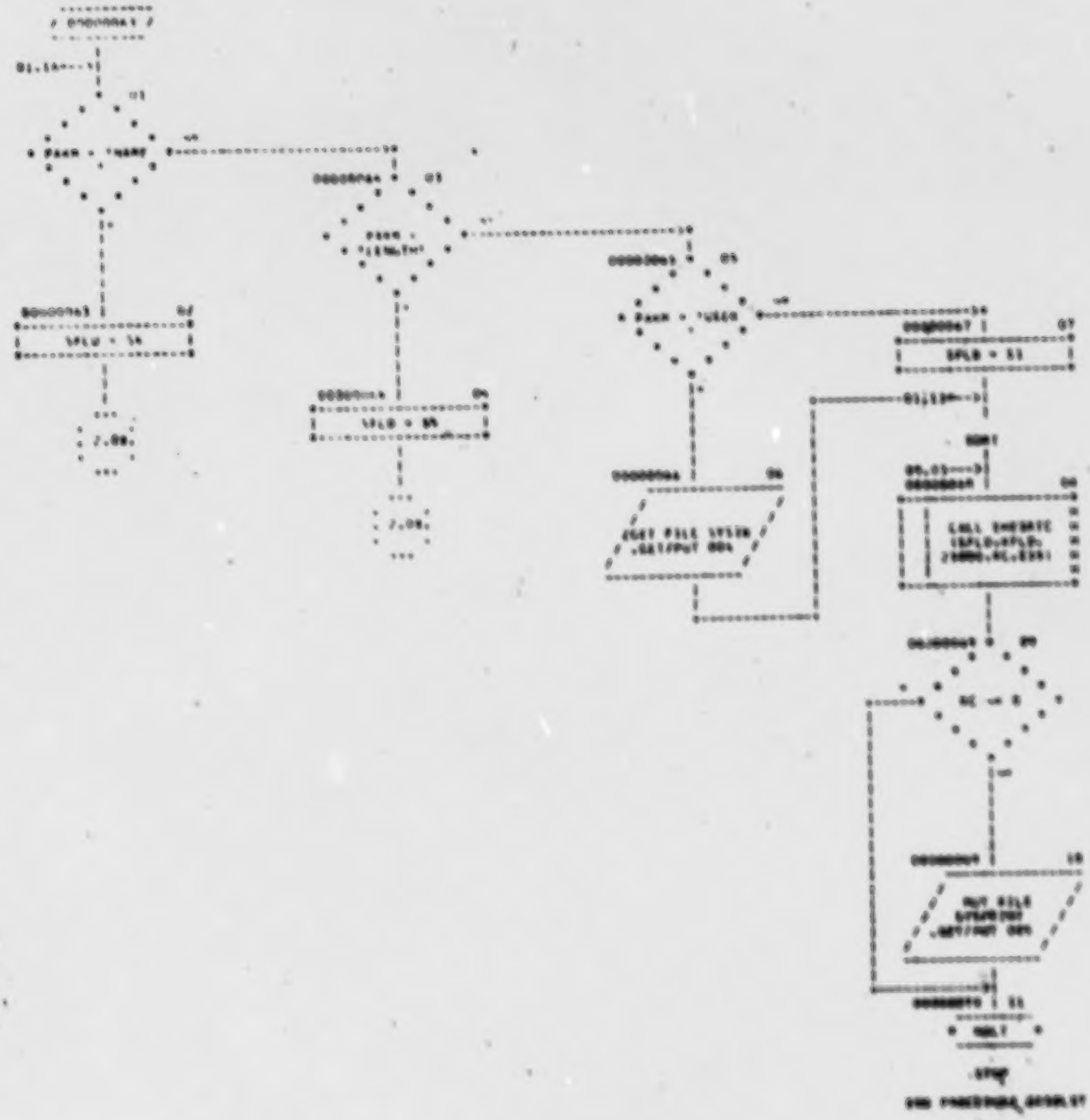
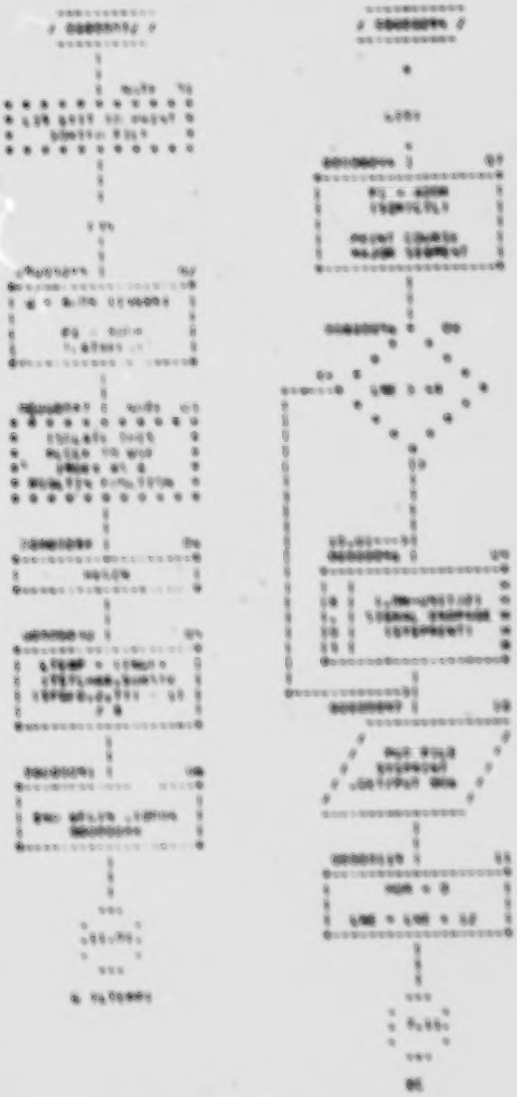

00000081
NOTE 01
INTEGRATED COURSE FILE PRINT PROGRAM
02
03
ON ERROR SNAP
00000036
04
ON ENDPAGE (SYSPRINT)
05
ON ENDFILE (SYSIN)
06
ON UNDEFINEDFILE (SYSIN)
07
TDTE = DATE
SUBSTR (DTE,1,2) = SUBSTR (TDTE,3,2)
SUBSTR (DTE,4,2) = SUBSTR (TDTE,5,2)
08
SUBSTR (DTE,7,2) = SUBSTR (TDTE,1,2)
09
OPEN FILE (SYSPRINT) PRINT
10
SIGNAL ENDPAGE (SYSPRINT)
11
GET FILE (SYSIN) GET/PUT 003
12
PARM = 'DEPT'
14
PARM = 'EOP'
16
PARM = 'NUMBER'
13
SFLD = S1
15
SFLD = S2
17
SFLD = S3
2.08
2.08
2.08
2
01

CHART TITLE - PROCEDURE CASELST OPTIONS (MAIN)


SFLD = 54
SFLD = 55
SFLD = 53
2.08
2.08
HALT
STOP
END PROCEDURE CASELST



BEST COPY AVAILABLE

CHART TITLE - PROCEDURE E39 (INVAR)

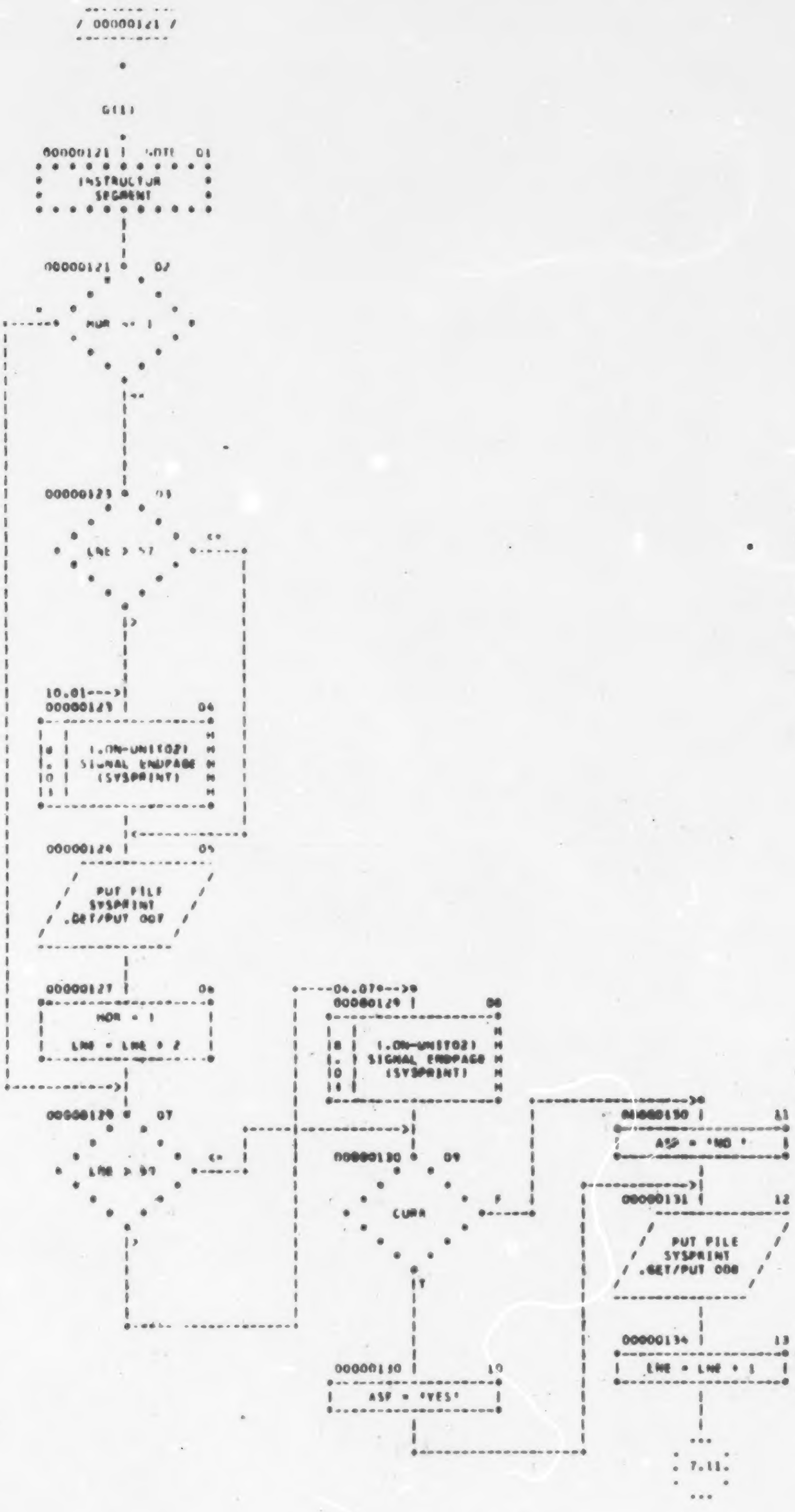

/ 00000121 /
G(1)
00000121 NOTE 01
INSTRUCTOR SEGMENT
00000121 02
MOR <= 1
=
00000123 03
LNE > 57
<=
>
10.01--->
00000123 04
(.ON-UNIT02) SIGNAL ENDPAGE (SYSPRINT)
00000124 05
PUT FILE SYSPRINT .GET/PUT 007
00000127 06
MOR = 1
LNE = LNE + 2
00000129 07
LNE > 57
<=
>
04.07--->
00000129 08
(.ON-UNIT02) SIGNAL ENDPAGE (SYSPRINT)
00000130 09
CURR
F
T
00000130 10
ASF = 'YES'
00000130 11
ASF = 'NO '
00000131 12
PUT FILE SYSPRINT .GET/PUT 008
00000134 13
LNE = LNE + 1
7.11.
EC

CHART TITLE - PROCEDURE (95 (INVAR)

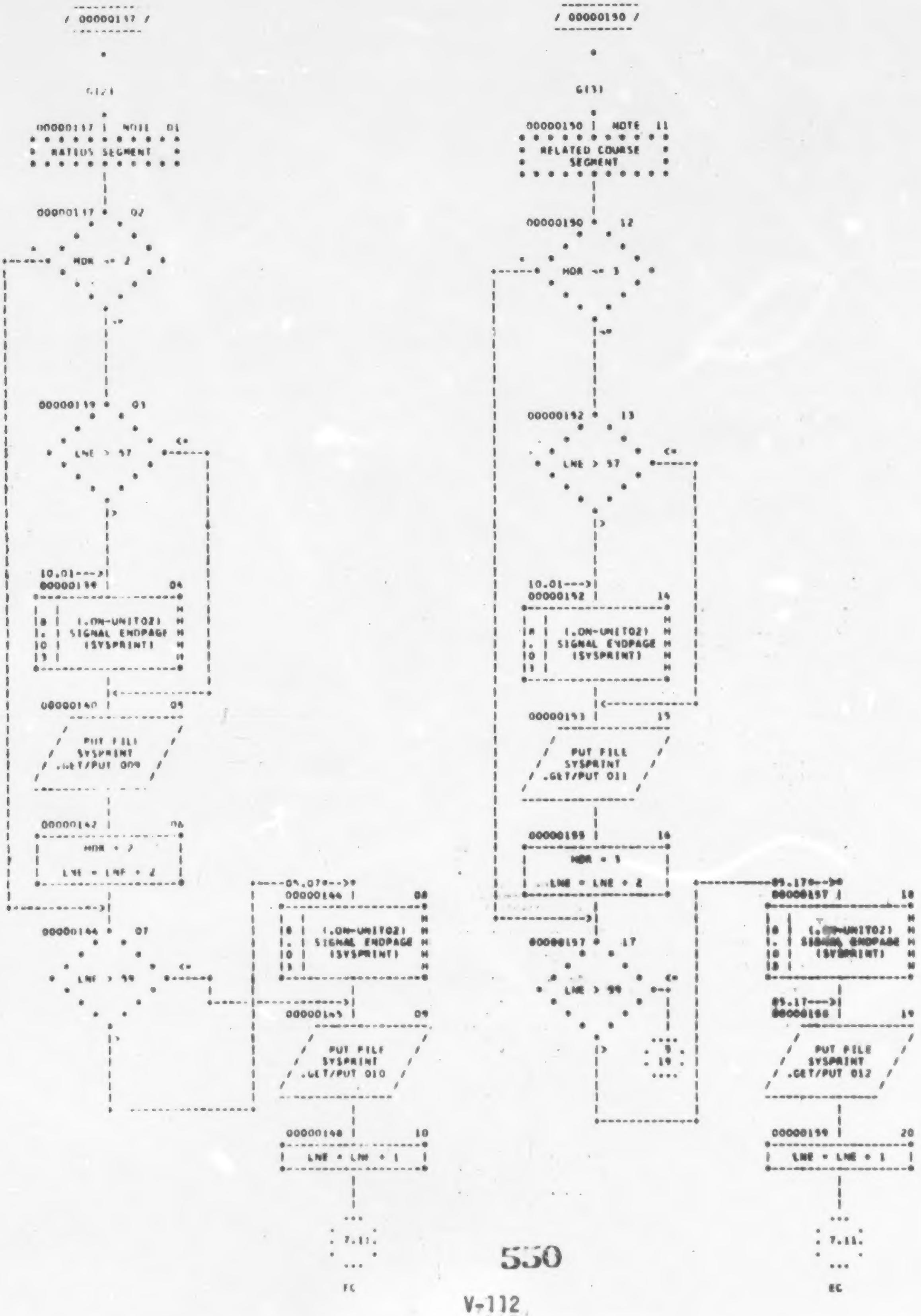

/ 00000137 /
G(2)
00000137 NOTE 01
RATIOS SEGMENT
00000137 02
HDR <= 2
<=
00000139 03
LNE > 57
<=
>
10.01--->
00000139 04
B . 0 3
(.ON-UNIT02)
SIGNAL ENDPAGE
(SYSPRINT)
00000140 05
PUT FILE
SYSPRINT
.GET/PUT 009
00000142 06
HDR = 2
LNE = LNE + 2
00000144 07
LNE > 59
<=
>
05.07<-->
00000144 08
B . 0 3
(.ON-UNIT02)
SIGNAL ENDPAGE
(SYSPRINT)
00000145 09
PUT FILE
SYSPRINT
.GET/PUT 010
00000148 10
LNE = LNE + 1
7.11.
EC
/ 00000150 /
G(3)
00000150 NOTE 11
RELATED COURSE
SEGMENT
00000150 12
HDR <= 3
<=
00000152 13
LNE > 57
<=
>
10.01--->
00000152 14
B . 0 3
(.ON-UNIT02)
SIGNAL ENDPAGE
(SYSPRINT)
00000153 15
PUT FILE
SYSPRINT
.GET/PUT 011
00000155 16
HDR = 3
LNE = LNE + 2
00000157 17
LNE > 59
<=
>
9
19
05.17<-->
00000157 18
B . 0 3
(.ON-UNIT02)
SIGNAL ENDPAGE
(SYSPRINT)
05.17--->
00000158 19
PUT FILE
SYSPRINT
.GET/PUT 012
00000159 20
LNE = LNE + 1
7.11.
EC

CHART TITLE - PROCEDURE 539 (INVAR)

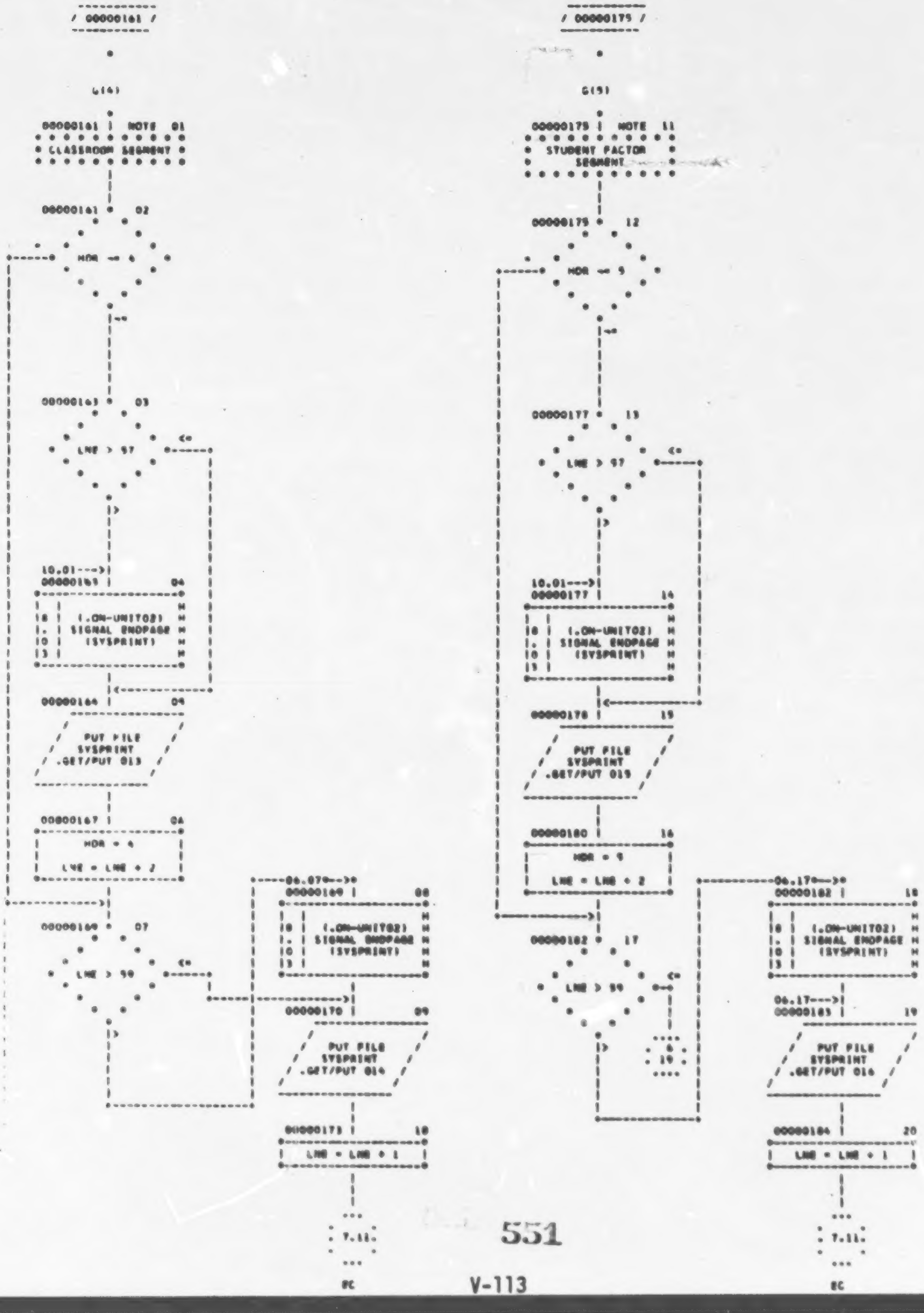
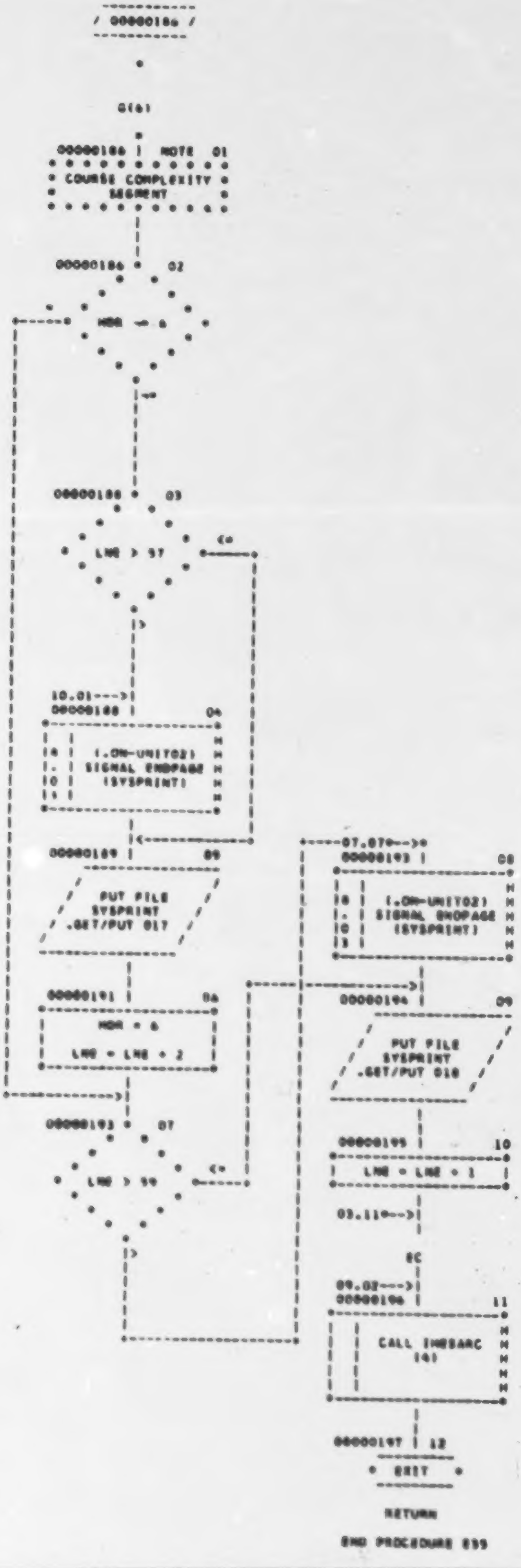
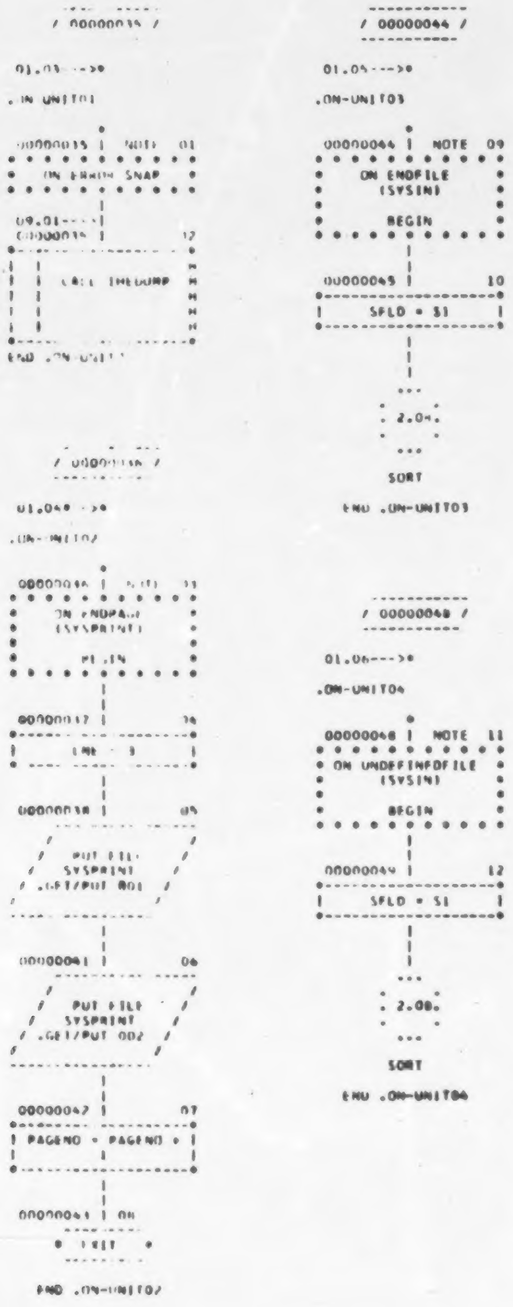

/ 00000161 /
G(4)
00000161 NOTE 01
CLASSROOM SEGMENT
00000161 02
HDR ¬= 4
¬=
00000163 03
LNE > 57
<=
>
10.01--->
00000163 04
(.ON-UNIT02)
SIGNAL ENDPAGE
(SYSPRINT)
00000166 05
PUT FILE
SYSPRINT
.GET/PUT 013
00000167 06
HDR = 4
LNE = LNE + 2
00000169 07
LNE > 59
<=
>
06.07--->
00000169 08
(.ON-UNIT02)
SIGNAL ENDPAGE
(SYSPRINT)
00000170 09
PUT FILE
SYSPRINT
.GET/PUT 014
00000173 10
LNE = LNE + 1
7.11.
EC
/ 00000175 /
G(5)
00000175 NOTE 11
STUDENT FACTOR
SEGMENT
00000175 12
HDR ¬= 5
¬=
00000177 13
LNE > 57
<=
>
10.01--->
00000177 14
(.ON-UNIT02)
SIGNAL ENDPAGE
(SYSPRINT)
00000178 15
PUT FILE
SYSPRINT
.GET/PUT 015
00000180 16
HDR = 5
LNE = LNE + 2
00000182 17
LNE > 59
<=
>
6
19
06.17--->
00000182 18
(.ON-UNIT02)
SIGNAL ENDPAGE
(SYSPRINT)
06.17--->
00000183 19
PUT FILE
SYSPRINT
.GET/PUT 016
00000184 20
LNE = LNE + 1
7.11.
EC

CHART TITLE - PROCEDURE E39 (INVAR)


/ 00000186 /
G(6)
00000186 NOTE 01
COURSE COMPLEXITY SEGMENT
00000186 02
HDR -= 6
=
00000188 03
LNE > 57
<=
>
10.01--->
00000188 04
(.ON-UNIT02) SIGNAL ENDPAGE (SYSPRINT)
00000189 05
PUT FILE SYSPRINT .GET/PUT 017
00000191 06
HDR = 6
LNE = LNE + 2
00000193 07
LNE > 59
<=
>
07.07=-->
00000193 08
(.ON-UNIT02) SIGNAL ENDPAGE (SYSPRINT)
00000194 09
PUT FILE SYSPRINT .GET/PUT 018
00000195 10
LNE = LNE + 1
03.11=-->
EC
09.02--->
00000196 11
CALL IHESARC (4)
00000197 12
EXIT
RETURN
END PROCEDURE E39

55

CHART TITLE - ON-UNIT ACTION BLOCKS


/ 00000035 /
01.03--->*
.ON-UNIT01
00000035 | NOTE 01
ON ERROR SNAP
09.01---|
00000036 | 12
CALL IHEDUMP
END .ON-UNIT01
/ 00000036 /
01.04--->*
.ON-UNIT02
00000036 | NOTE 03
ON ENDPAGE
(SYSPRINT)
BEGIN
00000037 | 04
LNE = 3
00000038 | 05
PUT FILE
SYSPRINT
.GET/PUT 001
00000041 | 06
PUT FILE
SYSPRINT
.GET/PUT 002
00000042 | 07
PAGENO = PAGENO + 1
00000043 | 08
EXIT
END .ON-UNIT02
/ 00000044 /
01.05--->*
.ON-UNIT03
00000044 | NOTE 09
ON ENDFILE
(SYSIN)
BEGIN
00000045 | 10
SFLD = S1
2.04.
SORT
END .ON-UNIT03
/ 00000048 /
01.06--->*
.ON-UNIT04
00000048 | NOTE 11
ON UNDEFINEDFILE
(SYSIN)
BEGIN
00000049 | 12
SFLD = S1
2.08.
SORT
END .ON-UNIT04

SOURCE LISTING.

```
STMT LEVEL NEST
                              /* INSTRUCTOR FILE LOAD PROGRAM */                              1
  1                  DLITPLI: PROCEDURE(INSTPCB) OPTIONS(MAIN);                               2
                                                                                             39
                              /**********************************************/               40
                              /* THIS SET OF DECLARATIONS DESCRIBES EACH OF */               41
                              /* THE SEGMENTS IN THE INSTRUCTOR DATA BASE.  */               42
                              /**********************************************/               43
                                                                                             44
  2     1                     DECLARE                                                        45
                              1  INSTRUCT,                                                   46
                                 2 NUMBER FIXED DEC(3,0),                                    47
                                 2 NAME CHAR(15),                                            48
                                 2 INITIALS(2) CHAR(1),                                      49
                                 2 RATE CHAR(5),                                             50
                                 2 DEPT CHAR(6),                                             51
                                 2 REPORT CHAR(6),                                           52
                                 2 ROTATE CHAR(4),                                           53
                                 2 AVAIL FIXED DEC(5,0);                                     54
                                                                                             56
                              /*******************/                                          57
                              /* INSTRUCTOR PCB */                                           58
                              /*******************/                                          59
                                                                                             60
  3     1                     DECLARE                                                        61
                                 1 INSTPCB,                                                  62
                                   2 DBNAME CHAR(8),                                         63
                                   2 LEVFD CHAR(2),                                          64
                                   2 STATCD CHAR(2),                                         65
                                   2 PROCOPT CHAR(4),                                        66
                                   2 JCBADDR POINTER,                                        67
                                   2 SEGFD CHAR(8),                                          68
                                   2 KEYLEN FIXED BIN(31),                                   69
                                   2 NOSS FIXED BIN(31),                                     70
                                   2 KEYFD CHAR(2),                                          71
                                   2 SN1 CHAR(8);                                            72
                                                                                             74
                              /*******************/                                          75
                              /* FUNCTION CODES */                                           76
                              /*******************/                                          77
                                                                                             78
  4     1                     DECLARE (GET_UNIQUE         CHAR(4) INIT('GU  '),              79
                                       GET_NEXT           CHAR(4) INIT('GN  '),              80
                                       GET_NEXT_WP        CHAR(4) INIT('GNP '),              81
                                       GET_HOLD_UNIQUE    CHAR(4) INIT('GHU '),              82
                                       GET_HOLD_NEXT      CHAR(4) INIT('GHN '),              83
                                       GET_HOLD_NEXT_WP   CHAR(4) INIT('GHNP'),              84
                                       INSERT             CHAR(4) INIT('ISRT'),              85
                                       DELETE             CHAR(4) INIT('DLET'),              86
                                       REPLACE            CHAR(4) INIT('REPL'),              87
                                       THREE FIXED BINARY(31) INIT(3),                       88
                                       FOUR  FIXED BINARY(31) INIT(4),                       89
                                       FIVE  FIXED BINARY(31) INIT(5)) STATIC;               90
```

```
              /* INSTRUCTOR FILE LOAD PROGRAM */                                                  PAGE

STMT LEVEL NEST

  5    1                     DECLARE
                                CODE CHAR(1) STATIC,
                                RC FIXED BINARY(31) STATIC,
                                SYSIN FILE RECORD SEQUENTIAL INPUT,
                                IMESARC ENTRY(FIXED BIN(31)) RETURNS(FIXED BIN(31)),
                                IMESRTC ENTRY(CHAR(35),CHAR(27),FIXED BIN(31),FIXED BIN(31)
                                        ,ENTRY) RETURNS(FIXED BIN(31));
  6    1                     CALL IMESRTC(' SORT FIELDS=(2,3,ZD,A),SIZE=E1000 ',
                                     ' RECORD TYPE=F,LENGTH=(80) ',49152,RC,E35);
  7    1                     IF RC¬=0 THEN PUT FILE(SYSPRINT) EDIT('SORT FAILED')(A);
  9    1                     RETURN;

 10    1          E35:       PROCEDURE(CARD);
 11    2                     DECLARE CARD CHAR(80);
 12    2                     ON CONVERSION BEGIN;
 14    3                        PUT FILE(SYSPRINT) EDIT('<---INVALID NUMERIC FIELD')(A);
 15    3                        GO TO RET;
 16    3                        END;
 17    2                     PUT FILE(SYSPRINT) SKIP EDIT(CARD)(A);
 18    2                     GET STRING(CARD) EDIT(CODE,INSTRUCT)
                                (A(1),F(3),A(15),(2)A(1),A(5),(2)A(6),A(4),F(5));
 19    2                     IF CODE¬='A' THEN
 20    2                        PUT FILE(SYSPRINT) EDIT('<---INVALID CARD CODE')(A);
 21    2                     ELSE DO;
 22    2    1                   CALL PLITDLI(FOUR,INSERT,INSTPCB,INSTRUCT,'INSTRUCT ');
 23    2    1                   IF STATCD¬='  ' THEN PUT FILE(SYSPRINT) EDIT
                                   ('DATA BASE ERROR - ERR CODE=',STATCD)(A);
 25    2    1                   END;
 26    2          RET:       CALL IMESARC(4);
 27    2                     RETURN;
 28    2                     END E35;

 29    1                     END DLITPLI;
```

CHART TITLE - PROCEDURE ULTIPLT(INSTRCPT OPTIONS (MAIN))

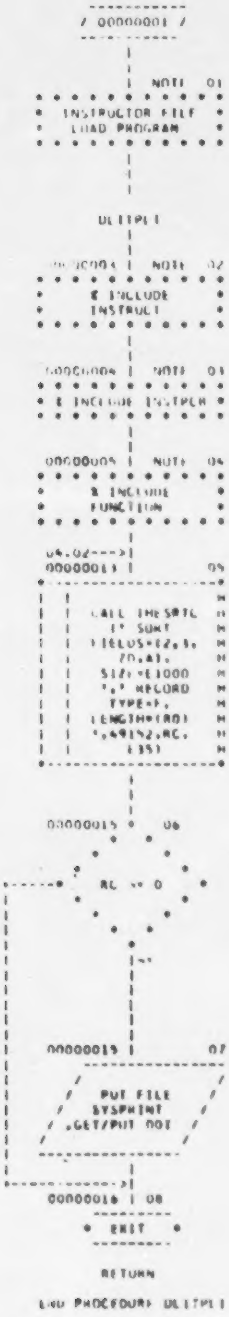
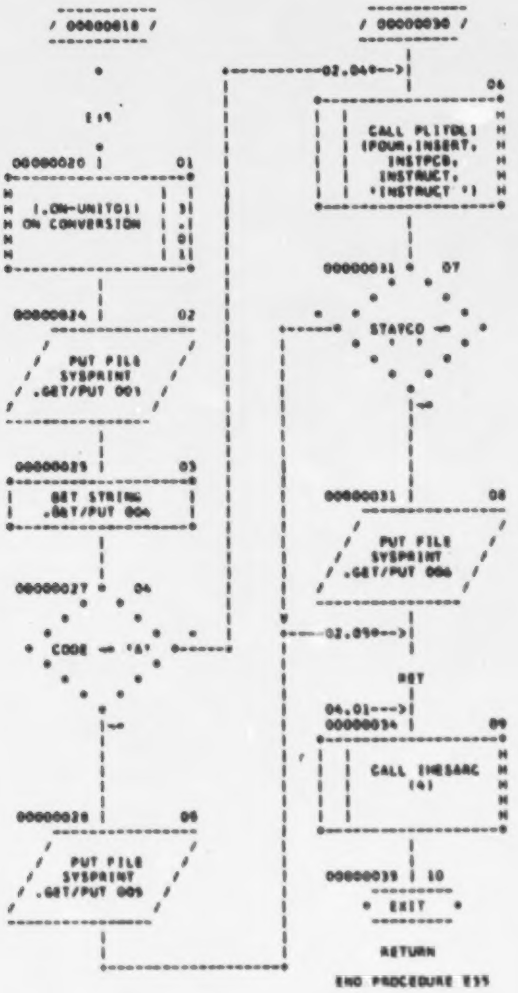

00000001
NOTE 01
INSTRUCTOR FILE LOAD PROGRAM
ULTIPLT
00000003 NOTE 02
% INCLUDE INSTRUCT
00000004 NOTE 03
% INCLUDE INSTPCH
00000005 NOTE 04
% INCLUDE FUNCTION
04.02--->
00000013 05
CALL IHESRTC ('' SORT FIELDS=(2,3, 70,A), SIZE=E1000 ',' RECORD TYPE=F, LENGTH=(80) ',49152,RC, E35)
00000015 06
RC ¬= 0
=
00000019 07
PUT FILE SYSPRINT ,GET/PUT DOT
00000016 08
EXIT
RETURN
END PROCEDURE ULTIPLT

CHART TITLE - PROCEDURE E35 (CARD)


00000018
00000030
02.049-->
06
CALL PLITDLI (FOUR,INSERT, INSTPCB, INSTRUCT, '(INSTRUCT ')
E35
00000020
01
(.ON-UNIT01) ON CONVERSION
3.01
00000031
07
STATCO ¬=
00000024
02
PUT FILE SYSPRINT .GET/PUT 003
¬=
00000025
03
GET STRING .GET/PUT 004
00000031
08
PUT FILE SYSPRINT .GET/PUT 006
00000027
04
CODE ¬= 'A'
02.050-->
RET
¬=
04.01--->
00000034
09
CALL IHESARC (4)
00000028
05
PUT FILE SYSPRINT .GET/PUT 005
00000035
10
EXIT
RETURN
END PROCEDURE E35

```
09/06/74                              AUTOFLOW CHART SET -                                  PAGE  03

 CHART TITLE - ON-UNIT ACTION BLOCKS



                              -----------
                             / 00000020 /
                             -----------

                          02.01--->*

                         .ON-UNIT01

                                    *
                          00000020 |  NOTE  01
                         * * * * * * * * * * *
                         *   ON CONVERSION   *
                         *                   *
                         *       BEGIN       *
                         * * * * * * * * * * *
                                    |
                                    |
                          00000021 |        02
                             ----------------
                            /               /
                           /   PUT FILE    /
                          /    SYSPRINT   /
                         /  .SST/PUT 002 /
                        ----------------
                                    |
                                    |
                                    |
                                   ...
                                  . 2.09.
                                  .     .
                                   ...
                                   RST
                          END .ON-UNIT01
```

```
               /* INSTRUCTOR FILE UPDATE PROGRAM */                                PAGE

               SOURCE LISTING.


STMT LEVEL NEST
                                   /* INSTRUCTOR FILE UPDATE PROGRAM */
  1                       DLITPLI: PROCEDURE(INSTPCB) OPTIONS(MAIN);

                                   /*********************/
                                   /* INSTRUCTOR PCB */
                                   /*********************/

  2     1                          DECLARE
                                      1 INSTPCB,
                                         2 DBNAME CHAR(8),
                                         2 LEVFD CHAR(2),
                                         2 STATCD CHAR(2),
                                         2 PROCOPT CHAR(4),
                                         2 JCBADDR POINTER,
                                         2 SEGFD CHAR(8),
                                         2 KEYLEN FIXED BIN(31),
                                         2 NOSS FIXED BIN(31),
                                         2 KEYFD CHAR(2),
                                         2 SNI CHAR(8);


                                   /*************************************************/
                                   /* THIS SET OF DECLARATIONS DESCRIBES EACH OF */
                                   /* THE SEGMENTS IN THE INSTRUCTOR DATA BASE.  */
                                   /*************************************************/

  3     1                          DECLARE
                                   1  INSTRUCT,
                                      2 NUMBER FIXED DEC(3,0),
                                      2 NAME CHAR(15),
                                      2 INITIALS(2) CHAR(1),
                                      2 RATE CHAR(5),
                                      2 DEPT CHAR(6),
                                      2 REPORT CHAR(6),
                                      2 ROTATE CHAR(4),
                                      2 AVAIL FIXED DEC(5,0);


                                   /*****************************/
                                   /* INSTRUCTOR SEGMENT SSA */
                                   /*****************************/

  4     1                          DECLARE
                                      1 INSTSSA STATIC,
                                         2 SEGMENT CHAR(8) INIT('INSTRUCT'),
                                         2 LP CHAR(1) INIT('('),
                                         2 FIELD CHAR(8) INIT('NUMBER  '),
                                         2 RO CHAR(2) INIT(' ='),
                                         2 KEY FIXED DEC(3,0),
                                         2 RP CHAR(1) INIT(')');
```

```
                  /* INSTRUCTOR FILE UPDATE PROGRAM */                                              PAGE

 STMT LEVEL NEST

                                   /*******************/
                                   /* FUNCTION CODES */
                                   /*******************/

   5    1                          DECLARE (GET_UNIQUE        CHAR(4) INIT('GU  '),
                                           GET_NEXT          CHAR(4) INIT('GN  '),
                                           GET_NEXT_WP       CHAR(4) INIT('GNP '),
                                           GET_HOLD_UNIQUE   CHAR(4) INIT('GHU '),
                                           GET_HOLD_NEXT     CHAR(4) INIT('GHN '),
                                           GET_HOLD_NEXT_WP  CHAR(4) INIT('GHNP'),
                                           INSERT            CHAR(4) INIT('ISRT'),
                                           DELETE            CHAR(4) INIT('DLET'),
                                           REPLACE           CHAR(4) INIT('REPL'),
                                           THREE FIXED BINARY(31) INIT(3),
                                           FOUR  FIXED BINARY(31) INIT(4),
                                           FIVE  FIXED BINARY(31) INIT(5)) STATIC;
   6    1                          DECLARE
                                      1 OVLY BASED(Q),
                                        2 NAM CHAR(15),
                                        2 INIT(2) CHAR(1),
                                        2 RAT CHAR(5),
                                        2 DEP CHAR(6),
                                        2 REP CHAR(6),
                                        2 ROT CHAR(4),
                                        2 AV CHAR(5),
                                      1 CARD,
                                        2 CODE CHAR(1),
                                        2 NO CHAR(3),
                                        2 DATA CHAR(76),
                                      STRING CHAR(79) BASED(P),
                                      SYSIN FILE RECORD SEQUENTIAL INPUT;
   7    1                          ON CONVERSION BEGIN;
   9    2                             PUT FILE(SYSPRINT) EDIT('<---INVALID NUMERIC')(A);
  10    2                             GO TO LOOP;
  11    2                             END;
  12    1                          P=ADDR(NO);
  13    1                          Q=ADDR(DATA);
  14    1                          ON ENDFILE(SYSIN) STOP;
  16    1                          OPEN FILE(SYSIN),FILE(SYSPRINT);
  17    1              LOOP:       READ FILE(SYSIN) INTO(CARD);
  18    1                          PUT FILE(SYSPRINT) SKIP(2) EDIT(CARD)(A);
  19    1                          IF VERIFY(NO,'0123456789 ')¬=0 THEN DO;
  21    1     1                       PUT FILE(SYSPRINT) EDIT('<---INVALID INSTRUCTOR NO.')(A);
  22    1     1                       GO TO LOOP;
  23    1     1                       END;
  24    1                          GET STRING(STRING) EDIT(KEY)(F(3));
  25    1                          IF CODE='D' THEN DO; /* DELETE AN INSTRUCTOR */
  27    1     1                       CALL PLITDLI(FOUR,GET_HOLD_UNIQUE,INSTPCB,
                                                INSTRUCT,INSTSSA);
  28    1     1                       IF STATCD¬='  ' THEN PUT FILE(SYSPRINT) EDIT
                                         ('<---INSTRUCTOR NOT FOUND')(A);
  30    1     1                       ELSE CALL PLITDLI(THREE,DELETE,INSTPCB,INSTRUCT);
  31    1     1                       END;
  32    1                          ELSE IF CODE='A' THEN DO; /* ADD AN INSTRUCTOR */
  34    1     1                       GET STRING(STRING) EDIT(INSTRUCT)
```

```
STMT LEVEL NEST

                                    (F(3),A(15),(2)A(1),A(5),(2)A(6),A(4),F(5));
 35     1     1                  CALL PLITDLI(FOUR,INSERT,INSTPCB,INSTRUCT,'INSTRUCT ');
 36     1     1                  IF STATCD¬='  ' THEN PUT FILE(SYSPRINT) EDIT
                                    ('<---DUPLICATE EXISTS')(A);
 38     1     1                  END;
 39     1                     ELSE IF CODE='R' THEN DO; /* REPLACE AN INSTRUCTOR */
 41     1     1                  CALL PLITDLI(FOUR,GET_HOLD_UNIQUE,INSTPCB,
                                          INSTRUCT,INSTSSA);
 42     1     1                  IF STATCD¬='  ' THEN PUT FILE(SYSPRINT) EDIT
                                    ('<---INSTRUCTOR NOT FOUND')(A);
 44     1     1                  ELSE DO;
 45     1     2                     GET STRING(STRING) EDIT(INSTRUCT)
                                       (F(3),A(15),(2)A(1),A(5),(2)A(6),A(4),F(5));
 46     1     2                     CALL PLITDLI(THREE,REPLACE,INSTPCB,INSTRUCT);
 47     1     2                     END;
 48     1     1                  END;
 49     1                     ELSE IF CODE='C' THEN DO;
 51     1     1                  CALL PLITDLI(FOUR,GET_HOLD_UNIQUE,INSTPCB,INSTRUCT,INSTSSA)
 52     1     1                  ;IF STATCD='  ' THEN DO;
 54     1     2                  IF NAM¬=' ' THEN NAME=NAM;
 56     1     2                  IF INIT(1)¬=' ' | INIT(2)¬=' ' THEN INITIALS=INIT;
 58     1     2                  IF RAT¬=' ' THEN RATE=RAT;
 60     1     2                  IF DEP¬=' ' THEN DEPT=DEP;
 62     1     2                  IF REP¬=' ' THEN REPORT=REP;
 64     1     2                  IF ROT¬=' ' THEN ROTATE=ROT;
 66     1     2                  IF AV¬=' ' THEN GET STRING(AV) EDIT(AVAIL)(F(5));
 68     1     2                  CALL PLITDLI(THREE,REPLACE,INSTPCB,INSTRUCT);
 69     1     2                  IF STATCD='  ' THEN
 70     1     2                     PUT FILE(SYSPRINT) SKIP EDIT
                                    (INSTRUCT,'<---UPDATED SEGMENT')(F(4),A(15),(2)A(1),
                                       A(5),(2)A(6),A(4),F(5),X(5),A);
 71     1     2                  ELSE PUT FILE(SYSPRINT) EDIT('<---DL/I ERR - CODE=',STATCD)
                                    (A);
 72     1     2                  END;
 73     1     1                  ELSE PUT FILE(SYSPRINT) EDIT('<---DL/I ERR-CODE=',STATCD)
                                 (A);
 74     1     1                  END;
 75     1                     ELSE PUT FILE(SYSPRINT) EDIT('<---INVALID CARD CODE')(A);
 76     1                     GO TO LOOP;
 77     1                     END DLITPLI;
```

CHART TITLE [illegible]

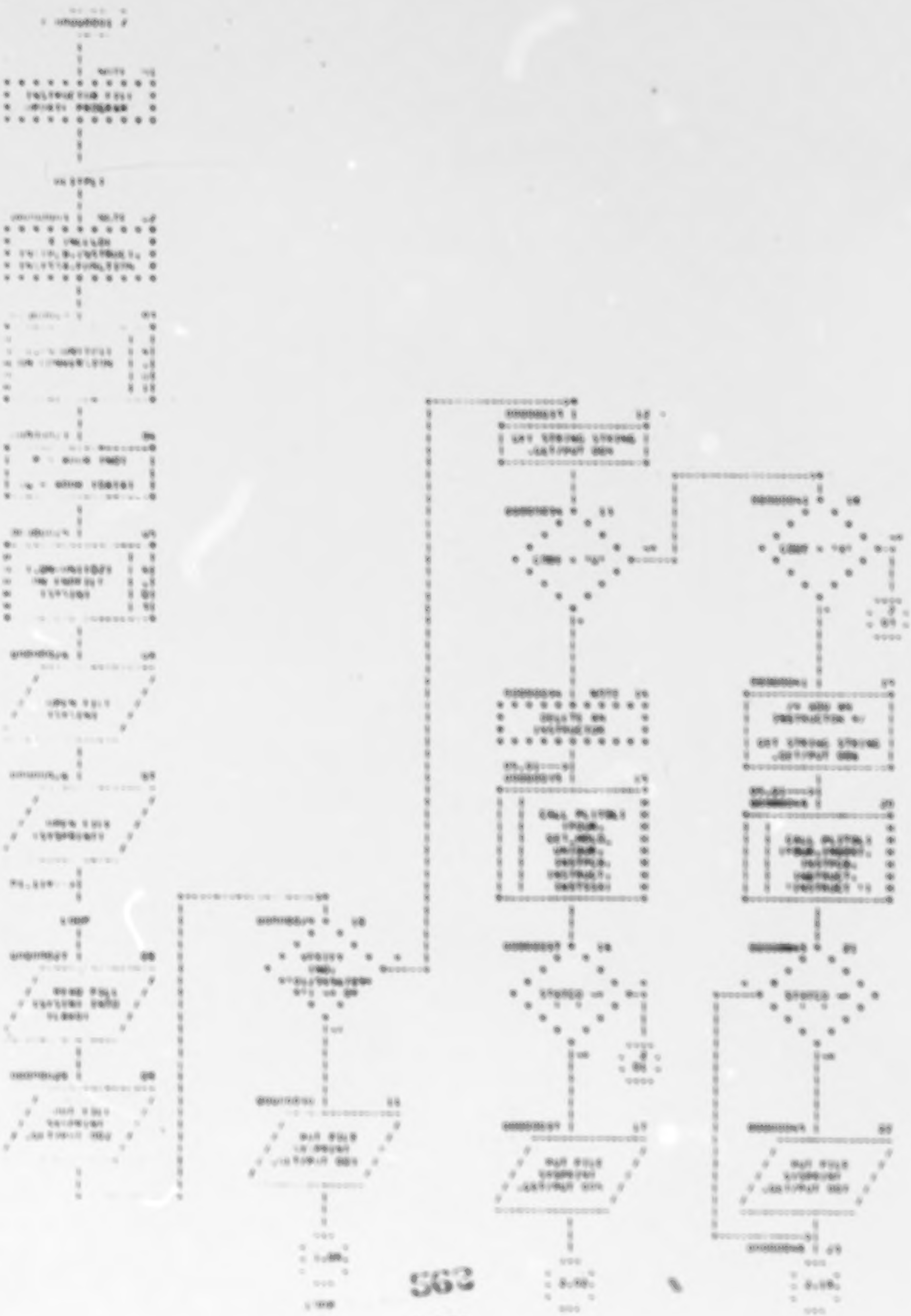


CHART TITLE - PROCEDURE DLITPLI (INSTPCB) OPTIONS (MAIN)

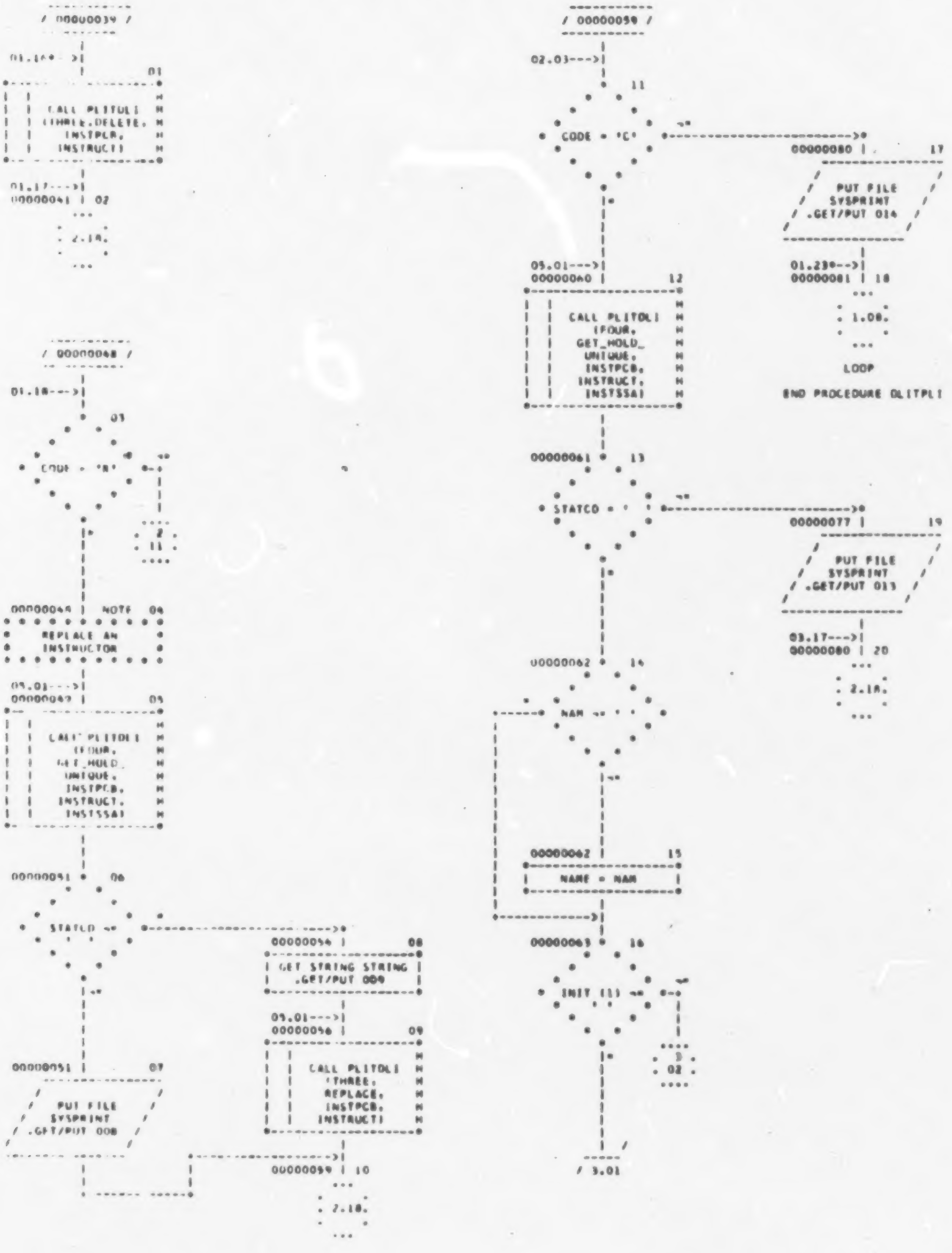
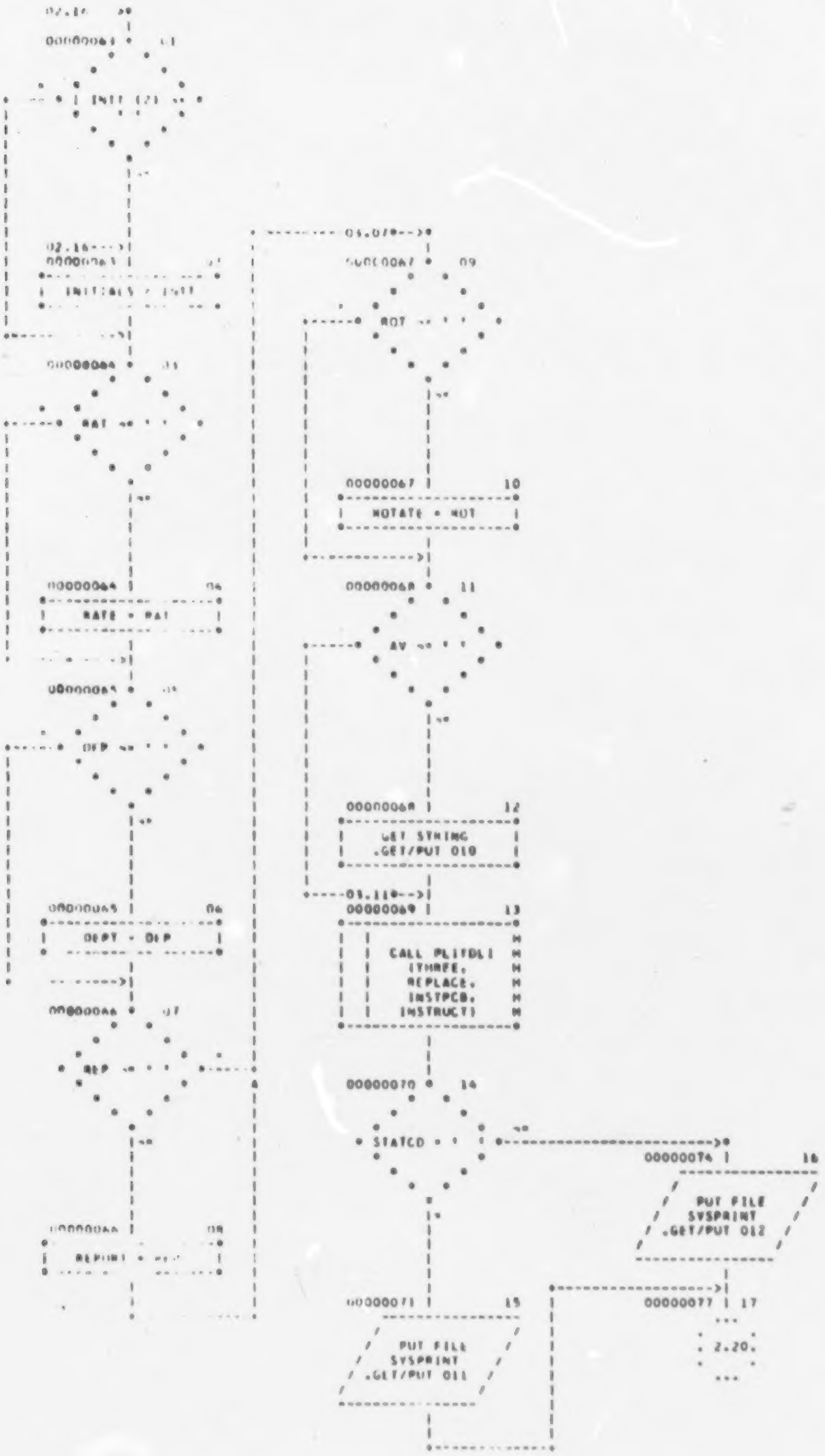

/ 00000039 /
01.16*--->
01
CALL PLITDLI (THREE,DELETE, INSTPCB, INSTRUCT)
01.17--->
00000041 02
2.18.
/ 00000048 /
01.18--->
03
CODE = 'R'
2
11
00000049 NOTE 04
REPLACE AN INSTRUCTOR
05.01--->
00000049 05
CALL PLITDLI (FOUR, GET_HOLD_ UNIQUE, INSTPCB, INSTRUCT, INSTSSA)
00000051 06
STATCO ¬=
00000054 08
GET STRING STRING .GET/PUT 009
05.01--->
00000056 09
CALL PLITDLI (THREE, REPLACE, INSTPCB, INSTRUCT)
00000051 07
PUT FILE SYSPRINT .GET/PUT 008
00000059 10
2.18.
/ 00000059 /
02.03--->
11
CODE = 'C'
00000080 17
PUT FILE SYSPRINT .GET/PUT 014
01.23*--->
00000081 18
1.08.
LOOP
END PROCEDURE DLITPLI
05.01--->
00000060 12
CALL PLITDLI (FOUR, GET_HOLD_ UNIQUE, INSTPCB, INSTRUCT, INSTSSA)
00000061 13
STATCO = ' '
00000077 19
PUT FILE SYSPRINT .GET/PUT 013
03.17--->
00000080 20
2.18.
00000062 14
NAM ¬= ' '
00000062 15
NAME = NAM
00000063 16
INIT (1) ¬= ' '
3
02
/ 3.01

CHART TITLE   PROCEDURE DLITPLI (INSTPCH) OPTIONS (MAIN)


02.16 ->
00000063 01
INIT (2) ¬= ' '
02.16 --->
00000063 02
INITIALS = INIT
00000064 03
RAT ¬= ' '
00000064 04
RATE = RAT
00000065 05
DEP ¬= ' '
00000065 06
DEPT = DEP
00000066 07
REP ¬= ' '
00000066 08
REPORT = REP
03.07 -->
00000067 09
ROT ¬= ' '
00000067 10
ROTATE = ROT
00000068 11
AV ¬= ' '
00000068 12
GET STRING
.GET/PUT 010
03.11 -->
00000069 13
CALL PLITDLI
(THREE,
REPLACE,
INSTPCB,
INSTRUCT)
00000070 14
STATCD = ' '
00000074 16
PUT FILE
SYSPRINT
.GET/PUT 012
00000071 15
PUT FILE
SYSPRINT
.GET/PUT 011
00000077 17
2.20

```
09/08/74                           AUTOFLOW CHART SET -                                   PAGE  04

CHART TITLE - ON-UNIT ACTION BLOCKS


                                  -----------
                                 / 00000019 /
                                 -----------

                              01.01--->*

                             .ON-UNIT01

                                      *
                              00000019 |  NOTE  01
                             * * * * * * * * * * *
                             *   ON CONVERSION   *
                             *                   *
                             *       BEGIN       *
                             * * * * * * * * * * *
                                       |
                                       |
                              00000020 |         02
                                  ----------------
                                 /              /
                                /   PUT FILE   /
                               /    SYSPRINT  /
                              / .GET/PUT 001 /
                             /              /
                             ----------------
                                       |
                                       |
                                       |
                                      ...
                                    .     .
                                    . 1.08.
                                    .     .
                                      ...

                                     LOOP

                                 END .ON-UNIT01




                                  -----------
                                 / 00000025 /
                                 -----------

                              01.05--->*

                             .ON-UNIT02

                                      *
                              00000025 |  NOTE  03
                             * * * * * * * * * * *
                             *    ON ENDFILE     *
                             *      (SYSIN)      *
                             * * * * * * * * * * *
                                       |
                                       |
                              00000025 | 04
                                   ---------
                                  *  HALT   *
                                   ---------

                                     STOP

                                 END .ON-UNIT02
```

```
/* INSTRUCTOR FILE UNLOAD PROGRAM */                                              PAGE

         SOURCE LISTING.

STMT LEVEL NEST
                         /* INSTRUCTOR FILE UNLOAD PROGRAM */
   1               DLITPLI: PROCEDURE(INSTPCB) OPTIONS(MAIN);

                         /*******************/
                         /* INSTRUCTOR PCB */
                         /*******************/

   2     1               DECLARE
                            1 INSTPCB,
                              2 DBNAME CHAR(8),
                              2 LEVFD CHAR(2),
                              2 STATCD CHAR(2),
                              2 PROCOPT CHAR(4),
                              2 JCBADDR POINTER,
                              2 SEGFD CHAR(8),
                              2 KEYLEN FIXED BIN(31),
                              2 NOSS FIXED BIN(31),
                              2 KEYFD CHAR(2),
                              2 SNI CHAR(8);

                         /**************************************************/
                         /* THIS SET OF DECLARATIONS DESCRIBES EACH OF */
                         /* THE SEGMENTS IN THE INSTRUCTOR DATA BASE.  */
                         /**************************************************/

   3     1               DECLARE
                         1  INSTRUCT,
                            2 NUMBER FIXED DEC(3,0),
                            2 NAME CHAR(15),
                            2 INITIALS(2) CHAR(1),
                            2 RATE CHAR(5),
                            2 DEPT CHAR(6),
                            2 REPORT CHAR(6),
                            2 ROTATE CHAR(4),
                            2 AVAIL FIXED DEC(5,0);

                         /*******************/
                         /* FUNCTION CODES */
                         /*******************/

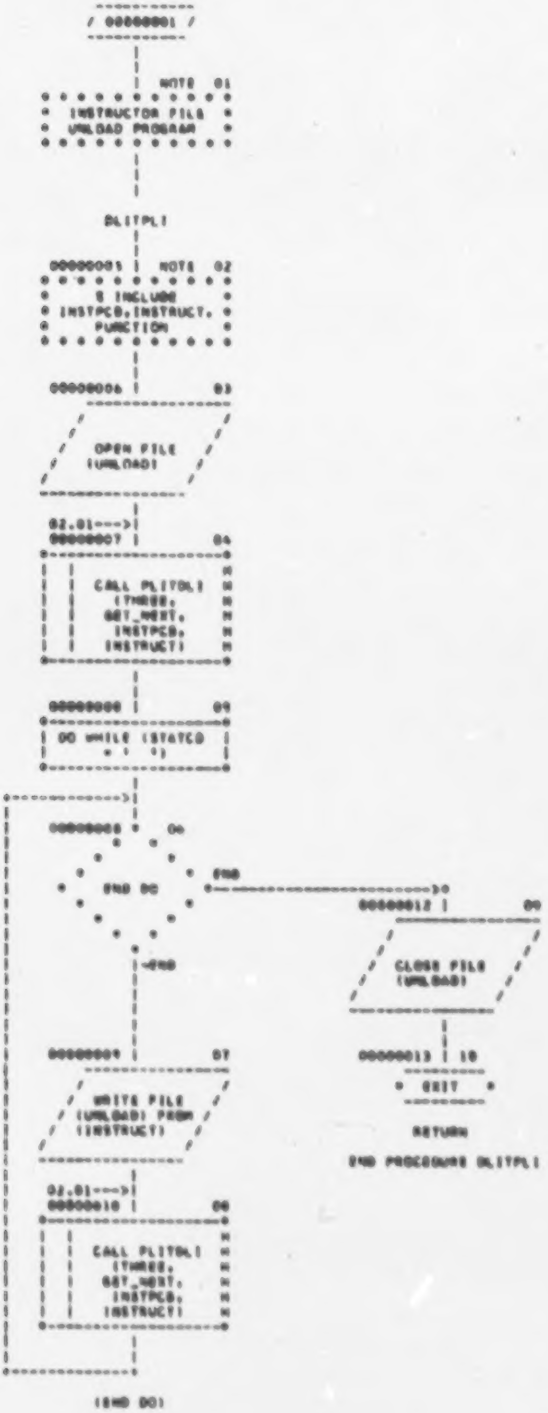
   4     1               DECLARE (GET_UNIQUE         CHAR(4) INIT('GU  '),
                                  GET_NEXT           CHAR(4) INIT('GN  '),
                                  GET_NEXT_WP        CHAR(4) INIT('GNP '),
                                  GET_HOLD_UNIQUE    CHAR(4) INIT('GHU '),
                                  GET_HOLD_NEXT      CHAR(4) INIT('GHN '),
                                  GET_HOLD_NEXT_WP   CHAR(4) INIT('GHNP'),
                                  INSERT             CHAR(4) INIT('ISRT'),
                                  DELETE             CHAR(4) INIT('DLET'),
                                  REPLACE            CHAR(4) INIT('REPL'),
                                  THREE FIXED BINARY(31) INIT(3),
                    /* INSTRUCTOR FILE UNLOAD PROGRAM */                                                    PAGE

 STMT LEVEL NEST

                               FOUR  FIXED BINARY(31) INIT(4),                                      65
                               FIVE  FIXED BINARY(31) INIT(5)) STATIC;                              66
   5    1                 DECLARE UNLOAD FILE RECORD SEQUENTIAL                                      4
                               OUTPUT ENVIRONMENT(F(3440,43));                                       5
   6    1                 OPEN FILE(UNLOAD);                                                         6
   7    1                 CALL PLITDLI(THREE,GET_NEXT,INSTPCB,INSTRUCT);                             7
   8    1                 DO WHILE(STATCD='  ');                                                     8
   9    1    1               WRITE FILE(UNLOAD) FROM(INSTRUCT);                                      9
  10    1    1               CALL PLITDLI(THREE,GET_NEXT,INSTPCB,INSTRUCT);                         10
  11    1    1               END;                                                                   11
  12    1                 CLOSE FILE(UNLOAD);                                                       12
  13    1                 RETURN;                                                                   13
  14    1                 END DLITPLI;                                                              14
```

7

CHART TITLE - PROCEDURE BLITPLI (INSTPCB) OPTIONS (MAIN)


00000001
NOTE 01
INSTRUCTOR FILE
UNLOAD PROGRAM
BLITPLI
00000003
NOTE 02
$ INCLUDE
INSTPCB,INSTRUCT,
FUNCTION
00000006
03
OPEN FILE
(UNLOAD)
02.01--->
00000007
04
CALL PLITDLI
(THREE,
GET_NEXT,
INSTPCB,
INSTRUCT)
00000008
05
DO WHILE (STATCD
= ' ')
00000008
06
END DO
END
-END
00000012
09
CLOSE FILE
(UNLOAD)
00000013
10
EXIT
RETURN
END PROCEDURE BLITPLI
00000009
07
WRITE FILE
(UNLOAD) FROM
(INSTRUCT)
02.01--->
00000010
08
CALL PLITDLI
(THREE,
GET_NEXT,
INSTPCB,
INSTRUCT)
(END DO)

```
/* INSTRUCTOR FILE RESTORE PROGRAM */                                              PAGE

SOURCE LISTING.

STMT LEVEL NEST
                        /* INSTRUCTOR FILE RESTORE PROGRAM */
  1            DLITPLI: PROCEDURE(INSTPCB) OPTIONS(MAIN);

                        /********************/
                        /* INSTRUCTOR PCB */
                        /********************/

  2    1                DECLARE
                           1 INSTPCB,
                             2 DBNAME CHAR(8),
                             2 LEVFD CHAR(2),
                             2 STATCD CHAR(2),
                             2 PROCOPT CHAR(4),
                             2 JCBADDR POINTER,
                             2 SEGFD CHAR(8),
                             2 KEYLEN FIXED BIN(31),
                             2 NOSS FIXED BIN(31),
                             2 KEYFD CHAR(2),
                             2 SNI CHAR(8);


                        /**************************************************/
                        /* THIS SET OF DECLARATIONS DESCRIBES EACH OF */
                        /* THE SEGMENTS IN THE INSTRUCTOR DATA BASE.  */
                        /**************************************************/

  3    1                DECLARE
                        1  INSTRUCT,
                           2 NUMBER FIXED DEC(3,0),
                           2 NAME CHAR(15),
                           2 INITIALS(2) CHAR(1),
                           2 RATE CHAR(5),
                           2 DEPT CHAR(6),
                           2 REPORT CHAR(6),
                           2 ROTATE CHAR(4),
                           2 AVAIL FIXED DEC(5,0);


                        /********************/
                        /* FUNCTION CODES */
                        /********************/

  4    1                DECLARE (GET_UNIQUE         CHAR(4) INIT('GU  '),
                                 GET_NEXT           CHAR(4) INIT('GN  '),
                                 GET_NEXT_WP        CHAR(4) INIT('GNP '),
                                 GET_HOLD_UNIQUE    CHAR(4) INIT('GHU '),
                                 GET_HOLD_NEXT      CHAR(4) INIT('GHN '),
                                 GET_HOLD_NEXT_WP   CHAR(4) INIT('GHNP'),
                                 INSERT             CHAR(4) INIT('ISRT'),
                                 DELETE             CHAR(4) INIT('DLET'),
                                 REPLACE            CHAR(4) INIT('REPL'),
                                 THREE FIXED BINARY(31) INIT(3),
           /* INSTRUCTOR FILE RESTORE PROGRAM */                                                     PAGE

STMT LEVEL NEST

                               FOUR  FIXED BINARY(31) INIT(4),                              65
                               FIVE  FIXED BINARY(31) INIT(5)) STATIC;                      66
  5    1                 DECLARE UNLOAD FILE RECORD SEQUENTIAL                              4
                               INPUT ENVIRONMENT(F(3440,43));                               5
  6    1                 OPEN FILE(UNLOAD);                                                 6
  7    1                 ON ENDFILE(UNLOAD) STOP;                                           7
  9    1                 DO WHILE('1'B);           /* DO FOREVER */                         8
 10    1    1               READ FILE(UNLOAD) INTO(INSTRUCT);                               9
 11    1    1               CALL PLITDLI(FOUR,INSERT,INSTPCB,INSTRUCT,'INSTRUCT ');         10
 12    1    1               IF STATCD¬=' ' THEN                                             11
 13    1    1                  PUT FILE(SYSPRINT) SKIP EDIT(STATCD)(A);                     12
 14    1    1               END;                                                            13
 15    1                 END DLITPLI;                                                       14
```

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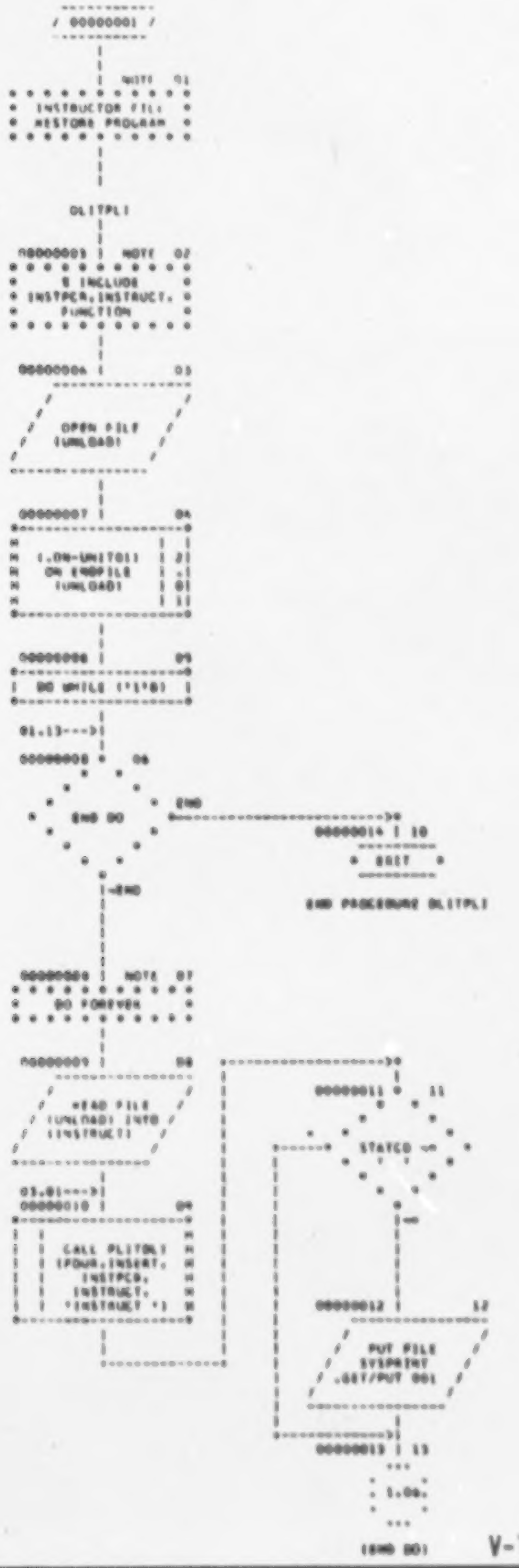
CHART TITLE - PROCEDURE DLITPLI (INSTPLB) OPTIONS (MAIN)


00000001
NOTE 01
INSTRUCTOR FILE RESTORE PROGRAM
DLITPLI
00000003 NOTE 02
% INCLUDE INSTPCA,INSTRUCT, FUNCTION
00000006 03
OPEN FILE (UNLOAD)
00000007 04
(.ON-UNIT01) ON ENDFILE (UNLOAD)
2.01
00000008 05
DO WHILE ('1'B)
01.13
00000008 06
END DO
END
-END
00000014 10
EXIT
END PROCEDURE DLITPLI
00000008 NOTE 07
DO FOREVER
00000009 08
READ FILE (UNLOAD) INTO (INSTRUCT)
03.01
00000010 09
CALL PLITDLI (FOUR,INSERT, INSTPCB, INSTRUCT, 'INSTRUCT ')
00000011 11
STATCD -=
=
00000012 12
PUT FILE SYSPRINT .GET/PUT 001
00000013 13
1.06.
(END DO)

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```
/* INSTRUCTOR FILE PRINT PROGRAM */                                                    PAGE

SOURCE LISTING.

STMT LEVEL NEST
                      /* INSTRUCTOR FILE PRINT PROGRAM */                              1
   1         DLITPLI: PROCEDURE(INSTPCB) OPTIONS(MAIN);                                2
                                                                                      96
                      /*******************/                                          97
                      /* INSTRUCTOR PCB */                                            98
                      /*******************/                                          99
                                                                                     100
   2    1             DECLARE                                                        101
                         1 INSTPCB,                                                  102
                           2 DBNAME CHAR(8),                                         103
                           2 LEVFD CHAR(2),                                          104
                           2 STATCD CHAR(2),                                         105
                           2 PROCOPT CHAR(4),                                        106
                           2 JCBADDR POINTER,                                        107
                           2 SEGFD CHAR(8),                                          108
                           2 KEYLEN FIXED BIN(31),                                   109
                           2 NUSS FIXED BIN(31),                                     110
                           2 KEYFD CHAR(2),                                          111
                           2 SVI CHAR(8);                                            112
                                                                                     114
                      /*******************/                                         115
                      /* FUNCTION CODES */                                           116
                      /*******************/                                         117
                                                                                     118
   3    1             DECLARE (GET_UNIQUE         CHAR(4) INIT('GU  '),              119
                               GET_NEXT           CHAR(4) INIT('GN  '),              120
                               GET_NEXT_WP        CHAR(4) INIT('GNP '),              121
                               GET_HOLD_UNIQUE    CHAR(4) INIT('GHU '),              122
                               GET_HOLD_NEXT      CHAR(4) INIT('GHN '),              123
                               GET_HOLD_NEXT_WP   CHAR(4) INIT('GHNP'),              124
                               INSERT             CHAR(4) INIT('ISRT'),              125
                               DELETE             CHAR(4) INIT('DLET'),              126
                               REPLACE            CHAR(4) INIT('REPL'),              127
                               THREE  FIXED BINARY(31) INIT(3),                      128
                               FOUR   FIXED BINARY(31) INIT(4),                      129
                               FIVE   FIXED BINARY(31) INIT(5)) STATIC;              130
   4    1             DECLARE                                                          5
                         1 INSTRUCT BASED(P),                                          6
                           2 NUMBER FIXED DEC(3,0),                                    7
                           2 NAME CHAR(15),                                            8
                           2 INITIALS(2) CHAR(1),                                      9
                           2 RATE CHAR(5),                                            10
                           2 DEPT CHAR(6),                                            11
                           2 REPORT CHAR(6),                                          12
                           2 ROTATE CHAR(4),                                          13
                           2 AVAIL FIXED DEC(5,0),                                    14
                         P POINTER STATIC,                                            15
                         RC FIXED BIN(31),                                            16
                         WRKAREA CHAR(43),                                            17
                         IHESARC ENTRY(FIXED BIN(31)) RETURNS(FIXED BIN(31)),         18
                         IHESATD ENTRY(CHAR(80),CHAR(80),FIXED BIN(31),FIXED BIN(31)  19
                                 ,ENTRY,ENTRY) RETURNS(FIXED BIN(31)),                20
```

```
                       /* INSTRUCTOR FILE PRINT PROGRAM */                                   PAGE

STMT LEVEL NEST

                                E15 ENTRY RETURNS(CHAR(80)),
                                E35 ENTRY(CHAR(80)),
                                PARM CHAR(6),
                                (SRT,S1 INIT
                             ('  SORT FIELDS=(29,6,CH,A,1,2,PD,A),SIZE=E1000 '),
                                S2 INIT
                             ('  SORT FIELDS=(1,5,CH,A,20,5,CH,A),SIZE=E1000 '),
                                S3 INIT
                             ('  SORT FIELDS=(1,5,CH,A,11,6,CH,A,3,17,CH,A),SIZE=E1000 '),
                                S4 INIT
                             ('  SORT FIELDS=(1,5,CH,A,17,4,CH,A,3,17,CH,A),SIZE=E1000 '),
                                S5 INIT
                             ('  SORT FIELDS=(29,6,CH,A,3,17,CH,A),SIZE=E1000 '),
                                RCD INIT
                             ('  RECORD TYPE=F,LENGTH=(80) ')) STATIC CHAR(80),
                                DTE CHARACTER(8) STATIC INIT('  /  /  '),
                                PGN FIXED DEC(3) STATIC INIT(1),
                                TDTE CHARACTER(6) STATIC;
   5     1                   TDTE=DATE;
   6     1                   SUBSTR(DTE,1,2)=SUBSTR(TDTE,3,2);
   7     1                   SUBSTR(DTE,4,2)=SUBSTR(TDTE,5,2);
   8     1                   SUBSTR(DTE,7,2)=SUBSTR(TDTE,1,2);
   9     1                   ON ENDPAGE(SYSPRINT) BEGIN;
  11     2                      PUT FILE(SYSPRINT) PAGE EDIT(DTE,
                                   'DSTS SUPPORT UTILITY---INSTRUCTOR FILE LISTING',
                                   'PAGE',PGN,'INSTRUCTOR NO.','INSTRUCTOR NAME',
                                   'RATE    DEPT    REPORT   ROTATE   AVAIL')
                                   (A,COL(30),A,COL(73),A,F(4),SKIP,A,X(5),A,X(6),A));
  12     2                      PUT FILE(SYSPRINT) SKIP(2);
  13     2                      PGN=PGN+1;
  14     2                      END;

  15     1                   ON ENDFILE(SYSIN) BEGIN;
  17     2                      SRT=S5;
  18     2                      GO TO SORT;
  19     2                      END;
  20     1                   ON UNDEFINEDFILE(SYSIN) BEGIN;
  22     2                      SRT=S5;
  23     2                      GO TO SORT;
  24     2                      END;
  25     1                   OPEN FILE(SYSPRINT),FILE(SYSIN);
  26     1                   GET FILE(SYSIN) EDIT(PARM)(A(6));
  27     1                   IF PARM='NUMBER' THEN SRT=S1;
  29     1                   ELSE IF PARM='RATE  ' THEN SRT=S2;
  31     1                   ELSE IF PARM='REPORT' THEN SRT=S3;
  33     1                   ELSE IF PARM='ROTATE' THEN SRT=S4;
  35     1                   ELSE IF PARM='USER' THEN
  36     1                      GET FILE(SYSIN) SKIP EDIT(SRT)(A(80));
  37     1                   ELSE SRT=S5;
  38     1          SORT:    SIGNAL ENDPAGE(SYSPRINT);
  39     1                   CALL IHESRTD(SRT,RCD,25000,RC,E15,E35);
  40     1                   CALL IHESARC(RC);
  41     1                   RETURN;

  42     1          E15:     PROCEDURE RETURNS(CHAR(80));
```

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```
          /* INSTRUCTOR FILE PRINT PROGRAM */                                          PAGE

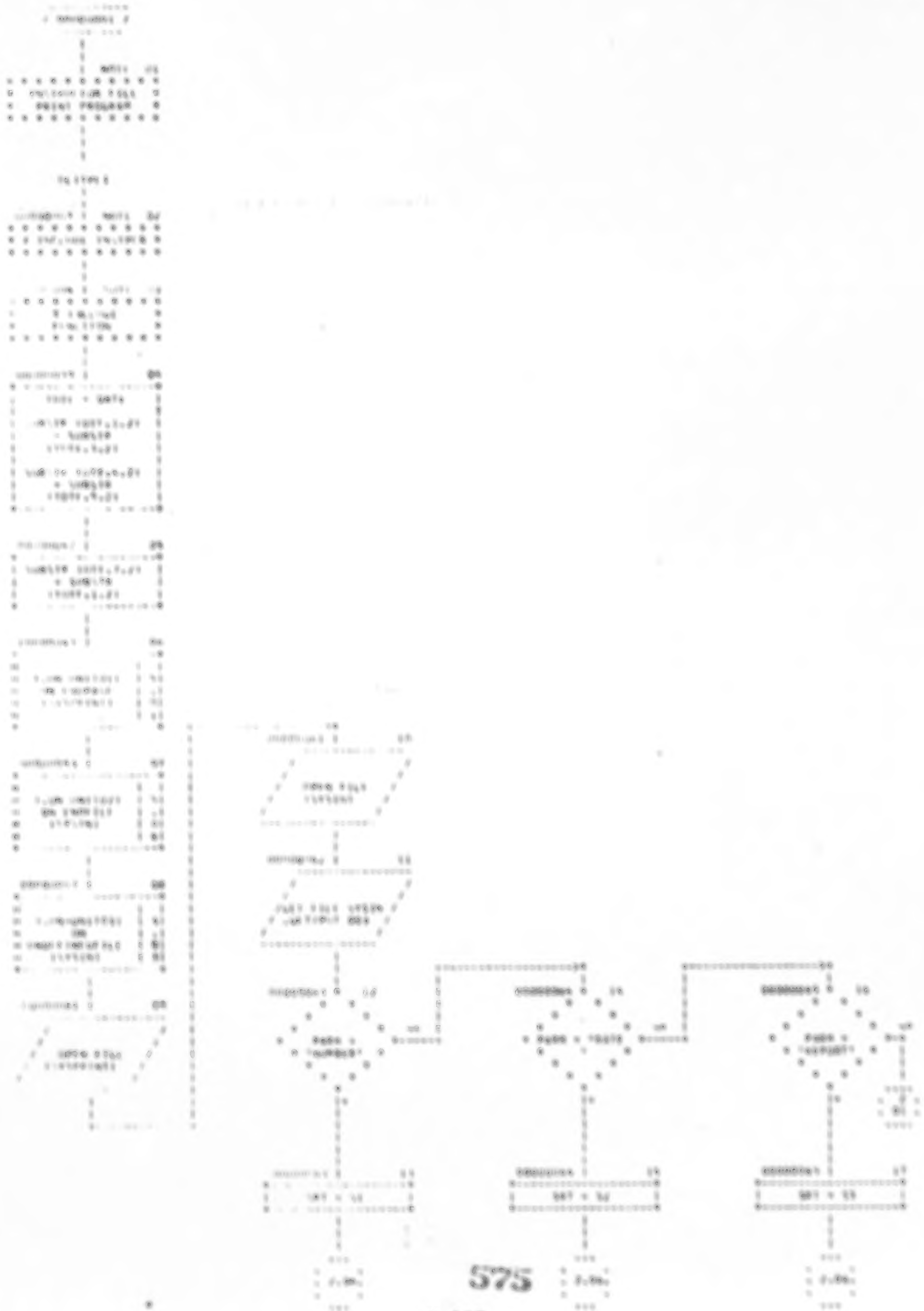
STMT LEVEL NEST

 84     2                    CALL PLITDLI(THREE,GET_NEXT,INSTPCB,WRKAREA);
 85     2                    IF STATCD='  ' THEN DO;
 86     2     1                 CALL IHESARC(12);
 87     2     1                 RETURN(WRKAREA);
 88     2     1                 END;
 89     2                    CALL IHESARC(8);
 90     2                    RETURN;
 91     2                    END E15;

 92     1           E35:     PROCEDURE(INWRK);
 93     2                    DECLARE INWRK CHAR(43);
 94     2                    P=ADDR(INWRK);
 95     2                    PUT FILE(SYSPRINT) SKIP EDIT(INSTRUCT)
                                (X(5),F(3),COL(10),A(15),(2)(X(1),A(1)),
                                X(1),A(5),(2)(X(3),A(6)),X(4),A(4),X(4),F(5));
 96     2                    CALL IHESARC(4);
 97     2                    RETURN;
 98     2                    END E35;

 99     1                    END DLITPLI;
```

[illegible]



BEST COPY AVAILABLE

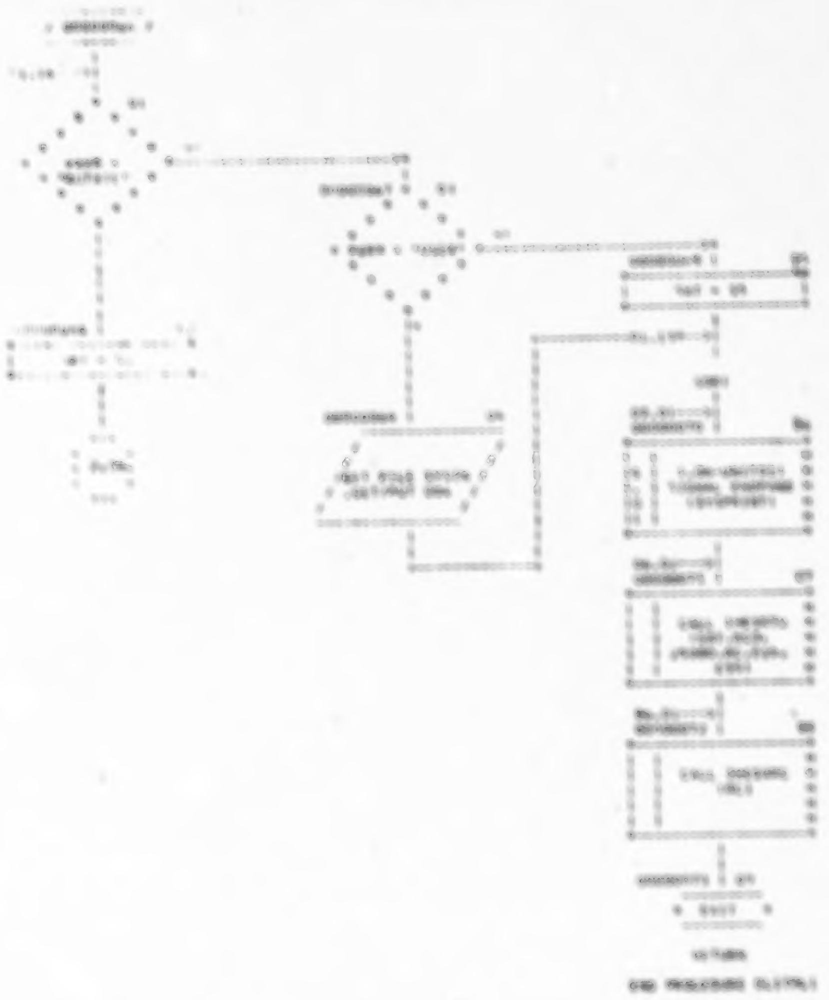


CHART TITLE - PROCEDURE EIS RETURN, (CHAR (4))

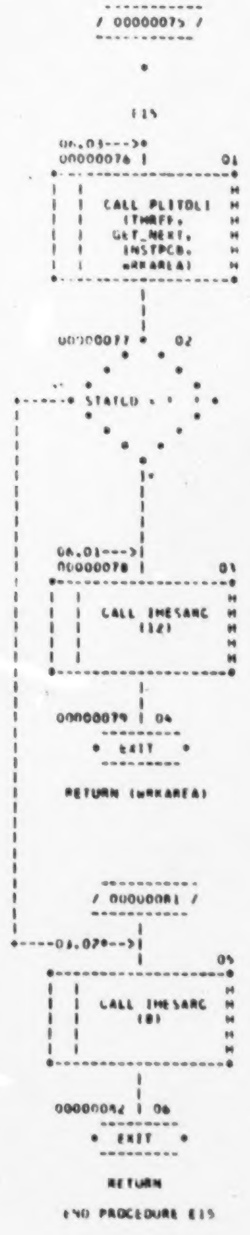

/ 00000075 /
EIS
06.03--->
00000076
01
CALL PLITDLI
(THREE,
GET_NEXT,
INSTPCB,
WRKAREA)
00000077
02
STATCD = ' '
00000078
03
06.01--->
CALL IMESARC
(12)
00000079
04
EXIT
RETURN (WRKAREA)
/ 00000081 /
03.02---->
05
CALL IMESARC
(8)
00000082
06
EXIT
RETURN
END PROCEDURE EIS

CHART TITLE - PROCEDURE E35 (INWRK)

```
             -----------
            / 00000085 /
            -----------

                 *

                E35

                 *
 00000087 |            01
*-------------------------*
| P = ADDR (INWRK)        |
*-------------------------*
                 |
                 |
 00000088 |            02
           ----------------
          /               /
        /   PUT FILE     /
       /    SYSPRINT    /
      /  GET/PUT 005   /
     /                /
    ----------------
                 |
 06.01--->|
 00000091 |            03
*-------------------------*
| |                       H
| |   CALL IMESARC        H
| |       (4)             H
| |                       H
| |                       H
*-------------------------*
                 |
                 |
 00000092 | 04
          ----------
        *   EXIT   *
          ----------

          RETURN

       END PROCEDURE E35
```

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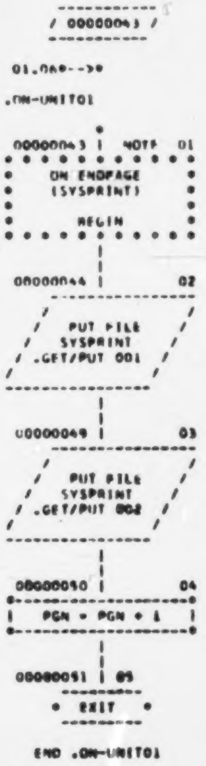
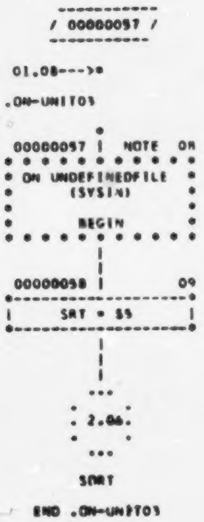
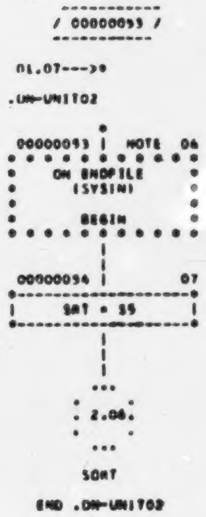
CHART TITLE - ON-UNIT ACTION BLOCKS


/ 00000043 /
01.06--->*
.ON-UNIT01
00000043 NOTE 01
ON ENDPAGE
(SYSPRINT)
BEGIN
00000044 02
PUT FILE
SYSPRINT
.GET/PUT 001
00000049 03
PUT FILE
SYSPRINT
.GET/PUT 002
00000050 04
PGN = PGN + 1
00000051 05
EXIT
END .ON-UNIT01


/ 00000057 /
01.08--->*
.ON-UNIT03
00000057 NOTE 08
ON UNDEFINEDFILE
(SYSIN)
BEGIN
00000058 09
SRT = $5
2.06.
SORT
END .ON-UNIT03


/ 00000053 /
01.07--->*
.ON-UNIT02
00000053 NOTE 06
ON ENDFILE
(SYSIN)
BEGIN
00000054 07
SRT = $5
2.06.
SORT
END .ON-UNIT02

```
FIELD TEST AND OVERLAY SUBROUTINE - COURSE FILE UPDATE                                                        PAGE    1

  LOC  OBJECT CODE     ADDR1 ADDR2  STMT   SOURCE STATEMENT                                                 F01FEB73   9/03/74

                                       2            ENTRY CCHECK,FCHECK
000000                                 3 CHECK      CSECT
000000 90EC D00C             0000C     4 CCHECK     STM   14,12,12(13)        SAVE REGISTERS
000000                                 5            USING CCHECK,15           ESTABLISH TEMPORARY ADDRESSABILITY
000004 41B0 F034             00034     6            LA    11,CHAR             SET ADDRESS OF CHAR ROUTINE
000008 47F0 F014             00014     7            B     STANDARD            CONTINUE
00000C 90EC D00C             0000C     8 FCHECK     STM   14,12,12(13)        SAVE REGISTERS
00000C                                 9            USING FCHECK,15           ESTABLISH TEMPORARY ADDRESSABILITY
000010 41B0 F036             00042    10            LA    11,FIXED            SET ADDRESS OF FIXED ROUTINE
                                      11 *          B     STANDARD            CONTINUE
                                      12            DROP  15
000014 05C0                           13 STANDARD   BALR  12,0                LOAD R12 AS BASE REGISTER
000016                                14            USING *,12
000016 5821 0000             00000    15            L     2,0(1)              R2->SDV FOR SOURCE
00001A 4832 0006             00006    16            LH    3,6(2)              R3=LENGTH OF SOURCE
00001E 0630                           17            BCTR  3,0                 DECREMENT LENGTH FOR EXECUTE
000020 5842 0000             00000    18            L     4,0(2)              R4->SOURCE
000024 4430 C04E             00064    19            EX    3,CLC               CHECK SOURCE FOR ALL BLANKS
000028 4780 C018             0002E    20            BE    RETURN              IF ALL BLANKS, RETURN
00002C 05AB                           21            BALR  10,11               LINK TO APPROPRIATE ROUTINE
00002E 98EC D00C             0000C    22 RETURN     LM    14,12,12(13)        RESTORE REGISTERS
000032 07FE                           23            BR    14                  RETURN TO CALLER
000034 5851 0004             00004    24 CHAR       L     5,4(1)              R5->SDV FOR DESTINATION
000038 5855 0000             00000    25            L     5,0(5)              R5->DESTINATION
00003C 4430 C054             0006A    26            EX    3,MVC               MOVE SOURCE TO DESTINATION
000040 07FA                           27            BR    10                  RETURN
000042 5851 0004             00004    28 FIXED      L     5,4(1)              R5->DESTINATION
000046 4163 0001             00001    29            LA    6,1(3)              R6=TRUE LENGTH
00004A 8860 0001             00001    30            SRL   6,1                 DIVIDE BY 2 TO GET DESTINATION LENGTH
00004E 8960 0004             00004    31            SLL   6,4                 SHIFT LENGTH TO PROPER POSITION
000052 1A36                           32            AR    3,6                 GENERATE LENGTH FIELD FOR PACK
000054 4430 C05A             00070    33            EX    3,PACK              PACK SOURCE TO DESTINATION
000058 8830 0004             00004    34            SRL   3,4                 KILL OLD LENGTH OF SOURCE FIELD
00005C 1A36                           35            AR    3,6                 GENERATE LENGTH FIELD FOR ZAP
00005E 4430 C060             00076    36            EX    3,ZAP               IF THIS BOMBS, BAD DATA IS HERE
000062 07FA                           37            BR    10                  RETURN
000064 D500 4000 C06A 00000 00080    38 CLC        CLC   0(0,4),=CL60' '     REMOTE COMPARE
00006A D200 5000 4000 00000 00000    39 MVC        MVC   0(0,5),0(4)         REMOTE MOVE
000070 F200 5000 4000 00000 00000    40 PACK       PACK  0(0,5),0(0,4)       REMOTE PACK
000076 F800 5000 5000 00000 00000    41 ZAP        ZAP   0(0,5),0(0,5)       REMOTE ZAP
                                      42            END
000080 40404040404040404040          43                  =CL60' '
```

CHART TITLE - 'FIELD TEST AND OVERLAY SUBROUTINE - COURSE FILE UPDATE'

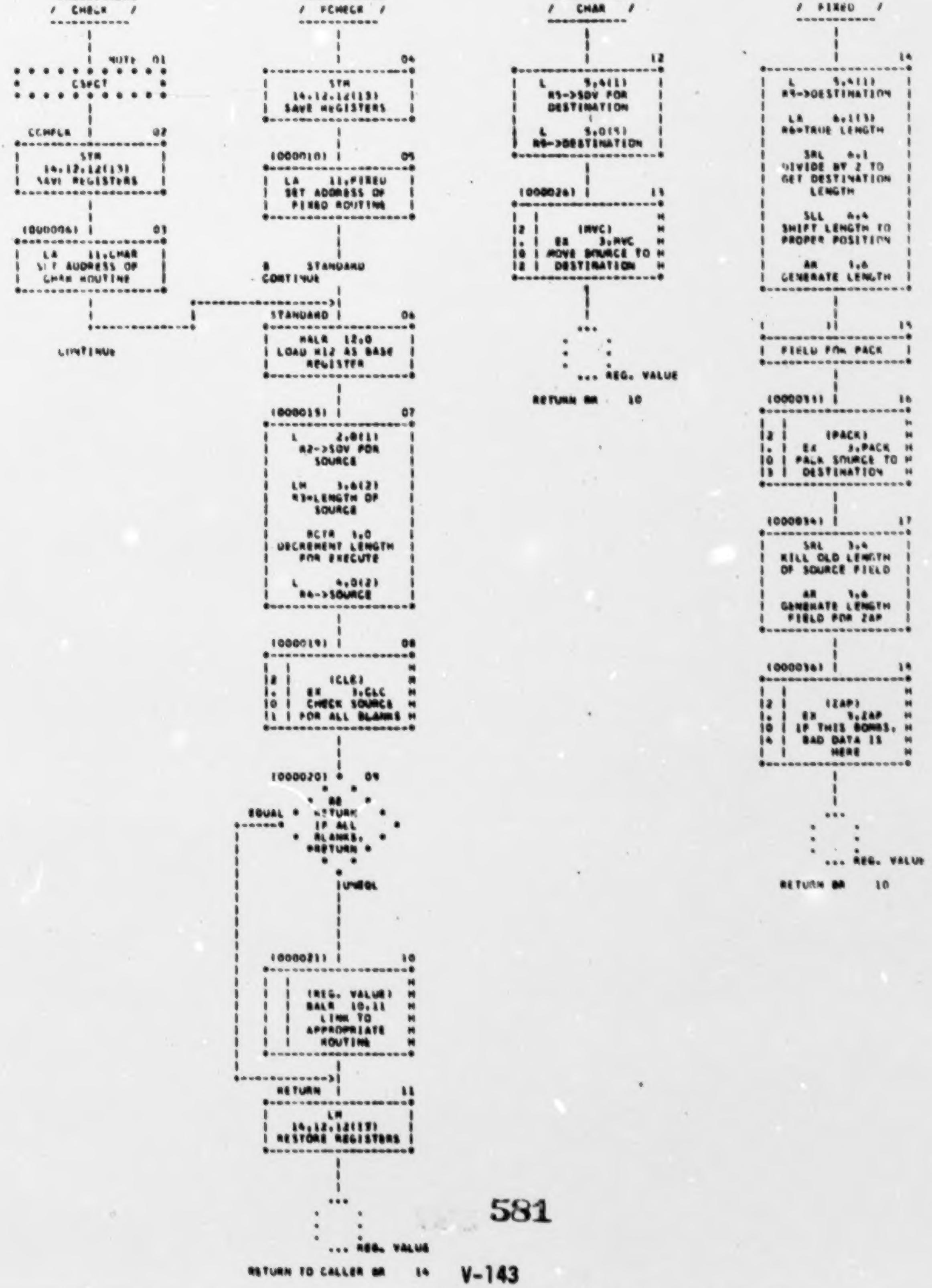
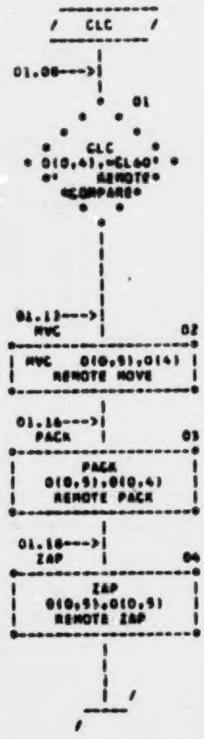

CHECK
NOTE 01
CSECT
CCMPLR 02
STM 14,12,12(13) SAVE REGISTERS
(000006) 03
LA 11,CHAR SET ADDRESS OF CHAR ROUTINE
CONTINUE
FCHECK
04
STM 14,12,12(13) SAVE REGISTERS
(000010) 05
LA 11,FIXED SET ADDRESS OF FIXED ROUTINE
B STANDARD CONTINUE
STANDARD 06
BALR 12,0 LOAD R12 AS BASE REGISTER
(000015) 07
L 2,0(1) R2->SDV FOR SOURCE
LH 3,6(2) R3=LENGTH OF SOURCE
BCTR 3,0 DECREMENT LENGTH FOR EXECUTE
L 4,0(2) R4->SOURCE
(000019) 08
2.01
(CLC) EX 3,CLC CHECK SOURCE FOR ALL BLANKS
(000020) 09
BE RETURN IF ALL BLANKS, RETURN
EQUAL
UNEQL
(000021) 10
(REG. VALUE) BALR 10,11 LINK TO APPROPRIATE ROUTINE
RETURN 11
LM 14,12,12(13) RESTORE REGISTERS
... REG. VALUE
RETURN TO CALLER BR 14
CHAR
12
L 5,4(1) R5->SDV FOR DESTINATION
L 5,0(5) R5->DESTINATION
(000026) 13
2.02
(MVC) EX 3,MVC MOVE SOURCE TO DESTINATION
... REG. VALUE
RETURN BR 10
FIXED
14
L 5,4(1) R5->DESTINATION
LA 6,1(3) R6=TRUE LENGTH
SRL 6,1 DIVIDE BY 2 TO GET DESTINATION LENGTH
SLL 6,4 SHIFT LENGTH TO PROPER POSITION
AR 3,6 GENERATE LENGTH
15
FIELD FOR PACK
(000031) 16
2.03
(PACK) EX 3,PACK PACK SOURCE TO DESTINATION
(000034) 17
SRL 3,4 KILL OLD LENGTH OF SOURCE FIELD
AR 3,6 GENERATE LENGTH FIELD FOR ZAP
(000036) 18
2.04
(ZAP) EX 3,ZAP IF THIS BOMBS, BAD DATA IS HERE
... REG. VALUE
RETURN BR 10

CHART TITLE - 'FIELD TEST AND OVERLAY SUBROUTINE - COURSE FILE UPDATE'


CLC
01.08--->
01
CLC
D(0,4),=CL60'
REMOTE
COMPARE
01.13--->
MVC
02
MVC D(0,5),0(4)
REMOTE MOVE
01.16--->
PACK
03
PACK
D(0,5),D(0,4)
REMOTE PACK
01.18--->
ZAP
04
ZAP
D(0,5),D(0,5)
REMOTE ZAP

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```
TRANSLATION ROUTINE TO ZAP DOLLAR SIGNS                                                                         PAGE    1

  LOC  OBJECT CODE     ADDR1 ADDR2  STMT   SOURCE STATEMENT                                           F01FEB73   9/03/74

000000                                 2 CONVERT  CSECT
000000 90EC D00C             0000C     3          STM    14,12,12(13)        SAVE REGISTERS
000004 05C0                            4          BALR   12,0                LOAD R12 AS A BASE REGISTER
000006                                 5          USING  *,12
000006 5811 0000             00000     6          L      1,0(1)              R1->STRING DOPE VECTOR
00000A 4821 0006             00006     7          LH     2,6(1)              R2=LENGTH OF STRING
00000E 1222                            8          LTR    2,2                 IS LENGTH POSITIVE?
000010 47D0 C01C             00022     9          BNP    RETURN              IF NOT, SKIP THE TRANSLATE
000014 5831 0000             00000    10          L      3,0(1)              R3->STRING
000018 0620                           11          BCTR   2,0                 DECREMENT LENGTH FOR EXECUTE
00001A 5840 C02A             00030    12          L      4,=V(TRTAB)         GET ADDRESS OF TRANSLATE TABLE
00001E 4420 C022             00028    13          EX     2,TRANS             TRANSLATE
000022 98EC D00C             0000C    14 RETURN   LM     14,12,12(13)        RESTORE REGISTERS
000026 07FE                           15          BR     14                  RETURN TO CALLING PROGRAM
000028 DC00 3000 4000 00000 00000     16 TRANS    TR     0(0,3),0(4)         REMOTE TRANSLATE INSTRUCTION
                                      17          END
000030 00000000                       18                 =V(TRTAB)
```

```
                                                                                            PAGE    1
LOC  OBJECT CODE    ADDR1 ADDR2  STMT   SOURCE STATEMENT                                 F01FF873   9/09/74

                                    1            MACRO
                                    2 &NAME      EBCDIC
                                    3            LCLA  &COUNT
                                    4 &COUNT     SETA  1
                                    5            SPACE
                                    6 &NAME      DC    AL1(0)
                                    7 .LOOP      ANOP
                                    8            DC    AL1(&COUNT)
                                    9 &COUNT     SETA  &COUNT+1
                                   10            AIF   (&COUNT LT 256).LOOP
                                   11            SPACE
                                   12            MEND
```

```
TRANSLATE TABLE TO ZAP DOLLAR SIGNS                                                                   PAGE    2

  LOC  OBJECT CODE    ADDR1 ADDR2  STMT   SOURCE STATEMENT                                     F01FEB73  9/09/74

000000                               14 TRTAB    CSECT
                                     15 TABLE    EBCDIC                    GENERATE EBCDIC SEQUENCE

000000 00                            17+TABLE    DC     AL1(0)
000001 01                            18+         DC     AL1(1)
000002 02                            19+         DC     AL1(2)
000003 03                            20+         DC     AL1(3)
000004 04                            21+         DC     AL1(4)
000005 05                            22+         DC     AL1(5)
000006 06                            23+         DC     AL1(6)
000007 07                            24+         DC     AL1(7)
000008 08                            25+         DC     AL1(8)
000009 09                            26+         DC     AL1(9)
00000A 0A                            27+         DC     AL1(10)
00000B 0B                            28+         DC     AL1(11)
00000C 0C                            29+         DC     AL1(12)
00000D 0D                            30+         DC     AL1(13)
00000E 0E                            31+         DC     AL1(14)
00000F 0F                            32+         DC     AL1(15)
000010 10                            33+         DC     AL1(16)
000011 11                            34+         DC     AL1(17)
000012 12                            35+         DC     AL1(18)
000013 13                            36+         DC     AL1(19)
000014 14                            37+         DC     AL1(20)
000015 15                            38+         DC     AL1(21)
000016 16                            39+         DC     AL1(22)
000017 17                            40+         DC     AL1(23)
000018 18                            41+         DC     AL1(24)
000019 19                            42+         DC     AL1(25)
00001A 1A                            43+         DC     AL1(26)
00001B 1B                            44+         DC     AL1(27)
00001C 1C                            45+         DC     AL1(28)
00001D 1D                            46+         DC     AL1(29)
00001E 1E                            47+         DC     AL1(30)
00001F 1F                            48+         DC     AL1(31)
000020 20                            49+         DC     AL1(32)
000021 21                            50+         DC     AL1(33)
000022 22                            51+         DC     AL1(34)
000023 23                            52+         DC     AL1(35)
000024 24                            53+         DC     AL1(36)
000025 25                            54+         DC     AL1(37)
000026 26                            55+         DC     AL1(38)
000027 27                            56+         DC     AL1(39)
000028 28                            57+         DC     AL1(40)
000029 29                            58+         DC     AL1(41)
00002A 2A                            59+         DC     AL1(42)
00002B 2B                            60+         DC     AL1(43)
00002C 2C                            61+         DC     AL1(44)
00002D 2D                            62+         DC     AL1(45)
00002E 2E                            63+         DC     AL1(46)
00002F 2F                            64+         DC     AL1(47)
000030 30                            65+         DC     AL1(48)
000031 31                            66+         DC     AL1(49)
000032 32                            67+         DC     AL1(50)
000033 33                            68+         DC     AL1(51)
```

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```
          TRANSLATE TABLE TO ZAP DOLLAR SIGNS                                                              PAGE    3

  LOC  OBJECT CODE    ADDR1 ADDR2  STMT    SOURCE STATEMENT                                           F01FEB73   9/09/74

000034 34                           69+          DC     AL1(52)
000035 35                           70+          DC     AL1(53)
000036 36                           71+          DC     AL1(54)
000037 37                           72+          DC     AL1(55)
000038 38                           73+          DC     AL1(56)
000039 39                           74+          DC     AL1(57)
00003A 3A                           75+          DC     AL1(58)
00003B 3B                           76+          DC     AL1(59)
00003C 3C                           77+          DC     AL1(60)
00003D 3D                           78+          DC     AL1(61)
00003E 3E                           79+          DC     AL1(62)
00003F 3F                           80+          DC     AL1(63)
000040 40                           81+          DC     AL1(64)
000041 41                           82+          DC     AL1(65)
000042 42                           83+          DC     AL1(66)
000043 43                           84+          DC     AL1(67)
000044 44                           85+          DC     AL1(68)
000045 45                           86+          DC     AL1(69)
000046 46                           87+          DC     AL1(70)
000047 47                           88+          DC     AL1(71)
000048 48                           89+          DC     AL1(72)
000049 49                           90+          DC     AL1(73)
00004A 4A                           91+          DC     AL1(74)
00004B 4B                           92+          DC     AL1(75)
00004C 4C                           93+          DC     AL1(76)
00004D 4D                           94+          DC     AL1(77)
00004E 4E                           95+          DC     AL1(78)
00004F 4F                           96+          DC     AL1(79)
000050 50                           97+          DC     AL1(80)
000051 51                           98+          DC     AL1(81)
000052 52                           99+          DC     AL1(82)
000053 53                          100+          DC     AL1(83)
000054 54                          101+          DC     AL1(84)
000055 55                          102+          DC     AL1(85)
000056 56                          103+          DC     AL1(86)
000057 57                          104+          DC     AL1(87)
000058 58                          105+          DC     AL1(88)
000059 59                          106+          DC     AL1(89)
00005A 5A                          107+          DC     AL1(90)
00005B 5B                          108+          DC     AL1(91)
00005C 5C                          109+          DC     AL1(92)
00005D 5D                          110+          DC     AL1(93)
00005E 5E                          111+          DC     AL1(94)
00005F 5F                          112+          DC     AL1(95)
000060 60                          113+          DC     AL1(96)
000061 61                          114+          DC     AL1(97)
000062 62                          115+          DC     AL1(98)
000063 63                          116+          DC     AL1(99)
000064 64                          117+          DC     AL1(100)
000065 65                          118+          DC     AL1(101)
000066 66                          119+          DC     AL1(102)
000067 67                          120+          DC     AL1(103)
000068 68                          121+          DC     AL1(104)
000069 69                          122+          DC     AL1(105)
00006A 6A                          123+          DC     AL1(106)
```

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TRANSLATE TABLE TO ZAP DOLLAR SIGNS                                               PAGE    4

  LOC  OBJECT CODE    ADDR1 ADDR2  STMT    SOURCE STATEMENT                       F01FEB71   9/09/74

00006B 6B                          124+          DC      AL1(107)
00006C 6C                          125+          DC      AL1(108)
00006D 6D                          126+          DC      AL1(109)
00006E 6E                          127+          DC      AL1(110)
00006F 6F                          128+          DC      AL1(111)
000070 70                          129+          DC      AL1(112)
000071 71                          130+          DC      AL1(113)
000072 72                          131+          DC      AL1(114)
000073 73                          132+          DC      AL1(115)
000074 74                          133+          DC      AL1(116)
000075 75                          134+          DC      AL1(117)
000076 76                          135+          DC      AL1(118)
000077 77                          136+          DC      AL1(119)
000078 78                          137+          DC      AL1(120)
000079 79                          138+          DC      AL1(121)
00007A 7A                          139+          DC      AL1(122)
00007B 7B                          140+          DC      AL1(123)
00007C 7C                          141+          DC      AL1(124)
00007D 7D                          142+          DC      AL1(125)
00007E 7E                          143+          DC      AL1(126)
00007F 7F                          144+          DC      AL1(127)
000080 80                          145+          DC      AL1(128)
000081 81                          146+          DC      AL1(129)
000082 82                          147+          DC      AL1(130)
000083 83                          148+          DC      AL1(131)
000084 84                          149+          DC      AL1(132)
000085 85                          150+          DC      AL1(133)
000086 86                          151+          DC      AL1(134)
000087 87                          152+          DC      AL1(135)
000088 88                          153+          DC      AL1(136)
000089 89                          154+          DC      AL1(137)
00008A 8A                          155+          DC      AL1(138)
00008B 8B                          156+          DC      AL1(139)
00008C 8C                          157+          DC      AL1(140)
00008D 8D                          158+          DC      AL1(141)
00008E 8E                          159+          DC      AL1(142)
00008F 8F                          160+          DC      AL1(143)
000090 90                          161+          DC      AL1(144)
000091 91                          162+          DC      AL1(145)
000092 92                          163+          DC      AL1(146)
000093 93                          164+          DC      AL1(147)
000094 94                          165+          DC      AL1(148)
000095 95                          166+          DC      AL1(149)
000096 96                          167+          DC      AL1(150)
000097 97                          168+          DC      AL1(151)
000098 98                          169+          DC      AL1(152)
000099 99                          170+          DC      AL1(153)
00009A 9A                          171+          DC      AL1(154)
00009B 9B                          172+          DC      AL1(155)
00009C 9C                          173+          DC      AL1(156)
00009D 9D                          174+          DC      AL1(157)
00009E 9E                          175+          DC      AL1(158)
00009F 9F                          176+          DC      AL1(159)
0000A0 A0                          177+          DC      AL1(160)
0000A1 A1                          178+          DC      AL1(161)
```

```
TRANSLATE TABLE TO ZAP DOLLAR SIGNS                                                                    PAGE    5

  LOC  OBJECT CODE    ADDR1 ADDR2  STMT   SOURCE STATEMENT                                            F01FE673   9/09/74

0000A2 A2                          179+         DC    AL1(162)
0000A3 A3                          180+         DC    AL1(163)
0000A4 A4                          181+         DC    AL1(164)
0000A5 A5                          182+         DC    AL1(165)
0000A6 A6                          183+         DC    AL1(166)
0000A7 A7                          184+         DC    AL1(167)
0000A8 A8                          185+         DC    AL1(168)
0000A9 A9                          186+         DC    AL1(169)
0000AA AA                          187+         DC    AL1(170)
0000AB AB                          188+         DC    AL1(171)
0000AC AC                          189+         DC    AL1(172)
0000AD AD                          190+         DC    AL1(173)
0000AE AE                          191+         DC    AL1(174)
0000AF AF                          192+         DC    AL1(175)
0000B0 B0                          193+         DC    AL1(176)
0000B1 B1                          194+         DC    AL1(177)
0000B2 B2                          195+         DC    AL1(178)
0000B3 B3                          196+         DC    AL1(179)
0000B4 B4                          197+         DC    AL1(180)
0000B5 B5                          198+         DC    AL1(181)
0000B6 B6                          199+         DC    AL1(182)
0000B7 B7                          200+         DC    AL1(183)
0000B8 B8                          201+         DC    AL1(184)
0000B9 B9                          202+         DC    AL1(185)
0000BA BA                          203+         DC    AL1(186)
0000BB BB                          204+         DC    AL1(187)
0000BC BC                          205+         DC    AL1(188)
0000BD BD                          206+         DC    AL1(189)
0000BE BE                          207+         DC    AL1(190)
0000BF BF                          208+         DC    AL1(191)
0000C0 C0                          209+         DC    AL1(192)
0000C1 C1                          210+         DC    AL1(193)
0000C2 C2                          211+         DC    AL1(194)
0000C3 C3                          212+         DC    AL1(195)
0000C4 C4                          213+         DC    AL1(196)
0000C5 C5                          214+         DC    AL1(197)
0000C6 C6                          215+         DC    AL1(198)
0000C7 C7                          216+         DC    AL1(199)
0000C8 C8                          217+         DC    AL1(200)
0000C9 C9                          218+         DC    AL1(201)
0000CA CA                          219+         DC    AL1(202)
0000CB CB                          220+         DC    AL1(203)
0000CC CC                          221+         DC    AL1(204)
0000CD CD                          222+         DC    AL1(205)
0000CE CE                          223+         DC    AL1(206)
0000CF CF                          224+         DC    AL1(207)
0000D0 D0                          225+         DC    AL1(208)
0000D1 D1                          226+         DC    AL1(209)
0000D2 D2                          227+         DC    AL1(210)
0000D3 D3                          228+         DC    AL1(211)
0000D4 D4                          229+         DC    AL1(212)
0000D5 D5                          230+         DC    AL1(213)
0000D6 D6                          231+         DC    AL1(214)
0000D7 D7                          232+         DC    AL1(215)
0000D8 D8                          233+         DC    AL1(216)
```

```
        TRANSLATE TABLE TO ZAP DOLLAR SIGNS                                                                  PAGE    6

  LOC  OBJECT CODE    ADDR1 ADDR2  STMT   SOURCE STATEMENT                                                   FJIFEB7     9/19/74

0000D9 D9                          234+          DC    AL1(217)
0000DA DA                          235+          DC    AL1(218)
0000DB DB                          236+          DC    AL1(219)
0000DC DC                          237+          DC    AL1(220)
0000DD DD                          238+          DC    AL1(221)
0000DE DE                          239+          DC    AL1(222)
0000DF DF                          240+          DC    AL1(223)
0000E0 E0                          241+          DC    AL1(224)
0000E1 E1                          242+          DC    AL1(225)
0000E2 E2                          243+          DC    AL1(226)
0000E3 E3                          244+          DC    AL1(227)
0000E4 E4                          245+          DC    AL1(228)
0000E5 E5                          246+          DC    AL1(229)
0000E6 E6                          247+          DC    AL1(230)
0000E7 E7                          248+          DC    AL1(231)
0000E8 E8                          249+          DC    AL1(232)
0000E9 E9                          250+          DC    AL1(233)
0000EA EA                          251+          DC    AL1(234)
0000EB EB                          252+          DC    AL1(235)
0000EC EC                          253+          DC    AL1(236)
0000ED ED                          254+          DC    AL1(237)
0000EE EE                          255+          DC    AL1(238)
0000EF EF                          256+          DC    AL1(239)
0000F0 F0                          257+          DC    AL1(240)
0000F1 F1                          258+          DC    AL1(241)
0000F2 F2                          259+          DC    AL1(242)
0000F3 F3                          260+          DC    AL1(243)
0000F4 F4                          261+          DC    AL1(244)
0000F5 F5                          262+          DC    AL1(245)
0000F6 F6                          263+          DC    AL1(246)
0000F7 F7                          264+          DC    AL1(247)
0000F8 F8                          265+          DC    AL1(248)
0000F9 F9                          266+          DC    AL1(249)
0000FA FA                          267+          DC    AL1(250)
0000FB FB                          268+          DC    AL1(251)
0000FC FC                          269+          DC    AL1(252)
0000FD FD                          270+          DC    AL1(253)
0000FE FE                          271+          DC    AL1(254)
0000FF FF                          272+          DC    AL1(255)

00005B                             274           ORG   TABLE+C'$'
00005B 00                          275           DC    X'00'            PATCH DOLLAR SIGN TO NON-PRINTABLE
000100                             276           ORG   TABLE+256        ORG BACK TO THE END OF THE TABLE
                                   277           END
```

09/11/74 AUTOFLOW CHART SET - PAGE 01

CHART TITLE - 'TRANSLATION ROUTINE TO ZAP DOLLAR SIGNS'

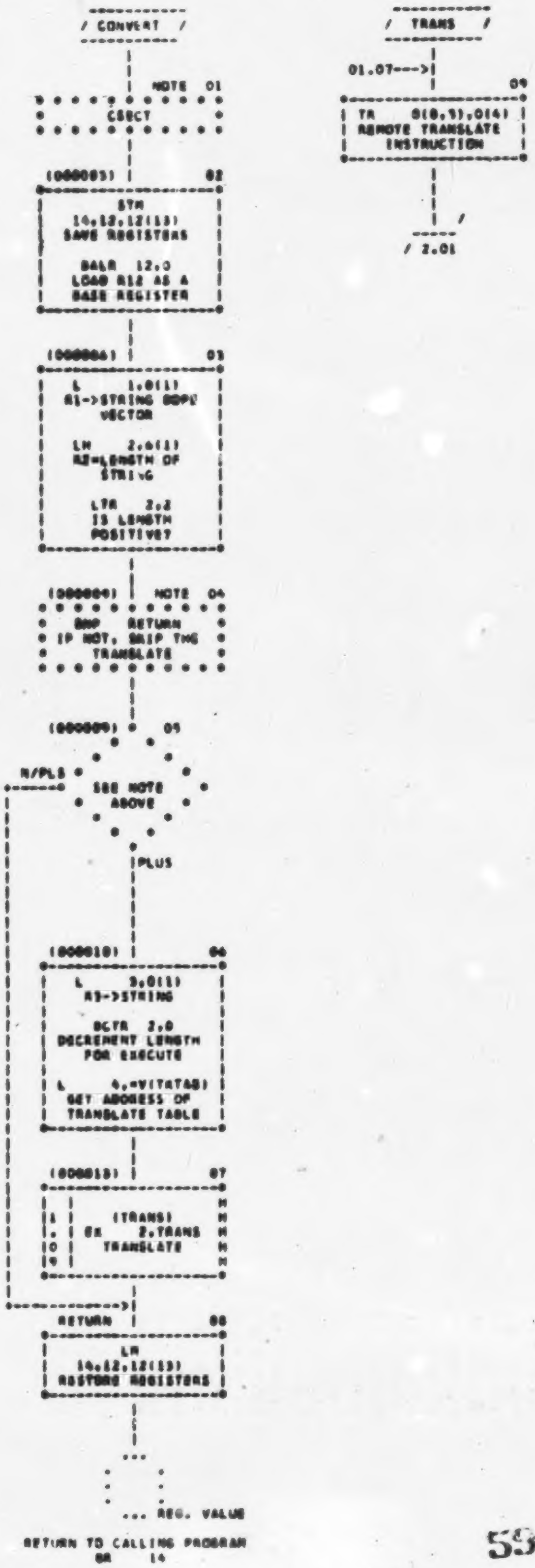
/ CONVERT /
NOTE 01
CSECT
(000003) 02
STM
14,12,12(13)
SAVE REGISTERS
BALR 12,0
LOAD R12 AS A
BASE REGISTER
(000006) 03
L 1,0(1)
R1->STRING DOPE
VECTOR
LH 2,6(1)
R2=LENGTH OF
STRING
LTR 2,2
IS LENGTH
POSITIVE?
(000008) NOTE 04
BNP RETURN
IF NOT, SKIP THE
TRANSLATE
(000009) 05
N/PLS
SEE NOTE
ABOVE
PLUS
(000010) 06
L 3,0(1)
R3->STRING
BCTR 2,0
DECREMENT LENGTH
FOR EXECUTE
L 4,=V(TRTAB)
GET ADDRESS OF
TRANSLATE TABLE
(000013) 07
1.09
(TRANS)
EX 2,TRANS
TRANSLATE
RETURN 08
LM
14,12,12(13)
RESTORE REGISTERS
... REG. VALUE
RETURN TO CALLING PROGRAM
BR 14
/ TRANS /
01.07--->
09
TR 0(0,3),0(4)
REMOTE TRANSLATE
INSTRUCTION
/ 2.01

CHART TITLE - 'TRANSLATE TABLE TO ZAP DOLLAR SIGNS'

```
 01.09--->*
   TRTAB    |   NOTE  01
 * * * * * * * * * * *
 *        CSECT        *
 * * * * * * * * * * *
            |
            |
   TABLE    |         02
 *-----------------------*
 |        EBCDIC         |
 |   GENERATE EBCDIC     |
 |       SEQUENCE        |
 *-----------------------*
            |
            |
            |
            |   /
         ------
        /
```

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```
         TRANSLATION ROUTINE TO CONVERT BLANKS TO PERIODS                                                                     PAGE    1

  LOC  OBJECT CODE     ADDR1 ADDR2  STMT   SOURCE STATEMENT                                                        F01FEB73   9/09/74

000000                                   2 BLNKDOT  CSECT
000000 90EC D00C               0000C     3          STM    14,12,12(13)          SAVE REGISTERS
000004 05C0                              4          BALR   12,0                  LOAD R12 AS A BASE REGISTER
000006                                   5          USING  *,12
000006 5811 0000               00000     6          L      1,0(1)                R1->STRING DOPE VECTOR
00000A 4821 0006               00006     7          LH     2,6(1)                R2=LENGTH OF STRING
00000E 1222                              8          LTR    2,2                   IS LENGTH POSITIVE?
000010 4700 C01C               00022     9          BNP    RETURN                IF NOT, SKIP THE TRANSLATE
000014 5831 0000               00000    10          L      3,0(1)                R3->STRING
000018 0620                             11          BCTR   2,0                   DECREMENT LENGTH FOR EXECUTE
00001A 5840 C02A               00030    12          L      4,=V(TRTAB)           GET ADDRESS OF TRANSLATE TABLE
00001E 4420 C022               00028    13          EX     2,TRANS               TRANSLATE
000022 98EC D00C               0000C    14 RETURN   LM     14,12,12(13)          RESTORE REGISTERS
000026 07FE                             15          BR     14                    RETURN TO CALLING PROGRAM
000028 DC00 3000 4000 00000 00000       16 TRANS    TR     0(0,3),0(4)           REMOTE TRANSLATE INSTRUCTION
                                        17          END
000030 00000000                         18                 =V(TRTAB)
```

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```
                                                                                   PAGE    1
LOC  OBJECT CODE    ADDR1 ADDR2  STMT   SOURCE STATEMENT                      F01FEB73  9/09/74

                                    1            MACRO
                                    2 &NAME      EBCDIC
                                    3            LCLA  &COUNT
                                    4 &COUNT     SETA  1
                                    5            SPACE
                                    6 &NAME      DC    AL1(0)
                                    7 .LOOP      ANOP
                                    8            DC    AL1(&COUNT)
                                    9 &COUNT     SETA  &COUNT+1
                                   10            AIF   (&COUNT LT 256).LOOP
                                   11            SPACE
                                   12            MEND
```

```
         TRANSLATE TABLE - BLANKS TO PERIODS                                                                                  PAGE    2

  LOC  OBJECT CODE    ADDR1 ADDR2  STMT   SOURCE STATEMENT                                                          F01FEB73   9/09/74

000000                              14 TRTAB    CSECT
                                    15 TABLE    EBCDIC                         GENERATE EBCDIC SEQUENCE

000000 00                           17+TABLE    DC      AL1(0)
000001 01                           18+         DC      AL1(1)
000002 02                           19+         DC      AL1(2)
000003 03                           20+         DC      AL1(3)
000004 04                           21+         DC      AL1(4)
000005 05                           22+         DC      AL1(5)
000006 06                           23+         DC      AL1(6)
000007 07                           24+         DC      AL1(7)
000008 08                           25+         DC      AL1(8)
000009 09                           26+         DC      AL1(9)
00000A 0A                           27+         DC      AL1(10)
00000B 0B                           28+         DC      AL1(11)
00000C 0C                           29+         DC      AL1(12)
00000D 0D                           30+         DC      AL1(13)
00000E 0E                           31+         DC      AL1(14)
00000F 0F                           32+         DC      AL1(15)
000010 10                           33+         DC      AL1(16)
000011 11                           34+         DC      AL1(17)
000012 12                           35+         DC      AL1(18)
000013 13                           36+         DC      AL1(19)
000014 14                           37+         DC      AL1(20)
000015 15                           38+         DC      AL1(21)
000016 16                           39+         DC      AL1(22)
000017 17                           40+         DC      AL1(23)
000018 18                           41+         DC      AL1(24)
000019 19                           42+         DC      AL1(25)
00001A 1A                           43+         DC      AL1(26)
00001B 1B                           44+         DC      AL1(27)
00001C 1C                           45+         DC      AL1(28)
00001D 1D                           46+         DC      AL1(29)
00001E 1E                           47+         DC      AL1(30)
00001F 1F                           48+         DC      AL1(31)
000020 20                           49+         DC      AL1(32)
000021 21                           50+         DC      AL1(33)
000022 22                           51+         DC      AL1(34)
000023 23                           52+         DC      AL1(35)
000024 24                           53+         DC      AL1(36)
000025 25                           54+         DC      AL1(37)
000026 26                           55+         DC      AL1(38)
000027 27                           56+         DC      AL1(39)
000028 28                           57+         DC      AL1(40)
000029 29                           58+         DC      AL1(41)
00002A 2A                           59+         DC      AL1(42)
00002B 2B                           60+         DC      AL1(43)
00002C 2C                           61+         DC      AL1(44)
00002D 2D                           62+         DC      AL1(45)
00002E 2E                           63+         DC      AL1(46)
00002F 2F                           64+         DC      AL1(47)
000030 30                           65+         DC      AL1(48)
000031 31                           66+         DC      AL1(49)
000032 32                           67+         DC      AL1(50)
000033 33                           68+         DC      AL1(51)
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          TRANSLATE TABLE - BLANKS TO PERIODS                                                                    PAGE    3

  LOC  OBJECT CODE    ADDR1 ADDR2  STMT    SOURCE STATEMENT                                                F01FEB73   9/09/74
000034 34                           69+           DC      AL1(52)
000035 35                           70+           DC      AL1(53)
000036 36                           71+           DC      AL1(54)
000037 37                           72+           DC      AL1(55)
000038 38                           73+           DC      AL1(56)
000039 39                           74+           DC      AL1(57)
00003A 3A                           75+           DC      AL1(58)
00003B 3B                           76+           DC      AL1(59)
00003C 3C                           77+           DC      AL1(60)
00003D 3D                           78+           DC      AL1(61)
00003E 3E                           79+           DC      AL1(62)
00003F 3F                           80+           DC      AL1(63)
000040 40                           81+           DC      AL1(64)
000041 41                           82+           DC      AL1(65)
000042 42                           83+           DC      AL1(66)
000043 43                           84+           DC      AL1(67)
000044 44                           85+           DC      AL1(68)
000045 45                           86+           DC      AL1(69)
000046 46                           87+           DC      AL1(70)
000047 47                           88+           DC      AL1(71)
000048 48                           89+           DC      AL1(72)
000049 49                           90+           DC      AL1(73)
00004A 4A                           91+           DC      AL1(74)
00004B 4B                           92+           DC      AL1(75)
00004C 4C                           93+           DC      AL1(76)
00004D 4D                           94+           DC      AL1(77)
00004E 4E                           95+           DC      AL1(78)
00004F 4F                           96+           DC      AL1(79)
000050 50                           97+           DC      AL1(80)
000051 51                           98+           DC      AL1(81)
000052 52                           99+           DC      AL1(82)
000053 53                          100+           DC      AL1(83)
000054 54                          101+           DC      AL1(84)
000055 55                          102+           DC      AL1(85)
000056 56                          103+           DC      AL1(86)
000057 57                          104+           DC      AL1(87)
000058 58                          105+           DC      AL1(88)
000059 59                          106+           DC      AL1(89)
00005A 5A                          107+           DC      AL1(90)
00005B 5B                          108+           DC      AL1(91)
00005C 5C                          109+           DC      AL1(92)
00005D 5D                          110+           DC      AL1(93)
00005E 5E                          111+           DC      AL1(94)
00005F 5F                          112+           DC      AL1(95)
000060 60                          113+           DC      AL1(96)
000061 61                          114+           DC      AL1(97)
000062 62                          115+           DC      AL1(98)
000063 63                          116+           DC      AL1(99)
000064 64                          117+           DC      AL1(100)
000065 65                          118+           DC      AL1(101)
000066 66                          119+           DC      AL1(102)
000067 67                          120+           DC      AL1(103)
000068 68                          121+           DC      AL1(104)
000069 69                          122+           DC      AL1(105)
00006A 6A                          123+           DC      AL1(106)
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TRANSLATE TABLE - BLANKS TO PERIODS                                                      PAGE    4

 LOC  OBJECT CODE    ADDR1 ADDR2  STMT    SOURCE STATEMENT                          F01FEB73   9/03/74
000068 68                         124+            DC     AL1(107)
00006C 6C                         125+            DC     AL1(108)
00006D 6D                         126+            DC     AL1(109)
00006E 6E                         127+            DC     AL1(110)
00006F 6F                         128+            DC     AL1(111)
000070 70                         129+            DC     AL1(112)
000071 71                         130+            DC     AL1(113)
000072 72                         131+            DC     AL1(114)
000073 73                         132+            DC     AL1(115)
000074 74                         133+            DC     AL1(116)
000075 75                         134+            DC     AL1(117)
000076 76                         135+            DC     AL1(118)
000077 77                         136+            DC     AL1(119)
000078 78                         137+            DC     AL1(120)
000079 79                         138+            DC     AL1(121)
00007A 7A                         139+            DC     AL1(122)
00007B 7B                         140+            DC     AL1(123)
00007C 7C                         141+            DC     AL1(124)
00007D 7D                         142+            DC     AL1(125)
00007E 7E                         143+            DC     AL1(126)
00007F 7F                         144+            DC     AL1(127)
000080 80                         145+            DC     AL1(128)
000081 81                         146+            DC     AL1(129)
000082 82                         147+            DC     AL1(130)
000083 83                         148+            DC     AL1(131)
000084 84                         149+            DC     AL1(132)
000085 85                         150+            DC     AL1(133)
000086 86                         151+            DC     AL1(134)
000087 87                         152+            DC     AL1(135)
000088 88                         153+            DC     AL1(136)
000089 89                         154+            DC     AL1(137)
00008A 8A                         155+            DC     AL1(138)
00008B 8B                         156+            DC     AL1(139)
00008C 8C                         157+            DC     AL1(140)
00008D 8D                         158+            DC     AL1(141)
00008E 8E                         159+            DC     AL1(142)
00008F 8F                         160+            DC     AL1(143)
000090 90                         161+            DC     AL1(144)
000091 91                         162+            DC     AL1(145)
000092 92                         163+            DC     AL1(146)
000093 93                         164+            DC     AL1(147)
000094 94                         165+            DC     AL1(148)
000095 95                         166+            DC     AL1(149)
000096 96                         167+            DC     AL1(150)
000097 97                         168+            DC     AL1(151)
000098 98                         169+            DC     AL1(152)
000099 99                         170+            DC     AL1(153)
00009A 9A                         171+            DC     AL1(154)
00009B 9B                         172+            DC     AL1(155)
00009C 9C                         173+            DC     AL1(156)
00009D 9D                         174+            DC     AL1(157)
00009E 9E                         175+            DC     AL1(158)
00009F 9F                         176+            DC     AL1(159)
0000A0 A0                         177+            DC     AL1(160)
0000A1 A1                         178+            DC     AL1(161)
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TRANSLATE TABLE - BLANKS TO PERIODS                                                    PAGE    5

  LOC  OBJECT CODE    ADDR1 ADDR2  STMT    SOURCE STATEMENT                          F01FEB73   9/09/74
0000A2 A2                           179+          DC      AL1(162)
0000A3 A3                           180+          DC      AL1(163)
0000A4 A4                           181+          DC      AL1(164)
0000A5 A5                           182+          DC      AL1(165)
0000A6 A6                           183+          DC      AL1(166)
0000A7 A7                           184+          DC      AL1(167)
0000A8 A8                           185+          DC      AL1(168)
0000A9 A9                           186+          DC      AL1(169)
0000AA AA                           187+          DC      AL1(170)
0000AB AB                           188+          DC      AL1(171)
0000AC AC                           189+          DC      AL1(172)
0000AD AD                           190+          DC      AL1(173)
0000AE AE                           191+          DC      AL1(174)
0000AF AF                           192+          DC      AL1(175)
0000B0 B0                           193+          DC      AL1(176)
0000B1 B1                           194+          DC      AL1(177)
0000B2 B2                           195+          DC      AL1(178)
0000B3 B3                           196+          DC      AL1(179)
0000B4 B4                           197+          DC      AL1(180)
0000B5 B5                           198+          DC      AL1(181)
0000B6 B6                           199+          DC      AL1(182)
0000B7 B7                           200+          DC      AL1(183)
0000B8 B8                           201+          DC      AL1(184)
0000B9 B9                           202+          DC      AL1(185)
0000BA BA                           203+          DC      AL1(186)
0000BB BB                           204+          DC      AL1(187)
0000BC BC                           205+          DC      AL1(188)
0000BD BD                           206+          DC      AL1(189)
0000BE BE                           207+          DC      AL1(190)
0000BF BF                           208+          DC      AL1(191)
0000C0 C0                           209+          DC      AL1(192)
0000C1 C1                           210+          DC      AL1(193)
0000C2 C2                           211+          DC      AL1(194)
0000C3 C3                           212+          DC      AL1(195)
0000C4 C4                           213+          DC      AL1(196)
0000C5 C5                           214+          DC      AL1(197)
0000C6 C6                           215+          DC      AL1(198)
0000C7 C7                           216+          DC      AL1(199)
0000C8 C8                           217+          DC      AL1(200)
0000C9 C9                           218+          DC      AL1(201)
0000CA CA                           219+          DC      AL1(202)
0000CB CB                           220+          DC      AL1(203)
0000CC CC                           221+          DC      AL1(204)
0000CD CD                           222+          DC      AL1(205)
0000CE CE                           223+          DC      AL1(206)
0000CF CF                           224+          DC      AL1(207)
0000D0 D0                           225+          DC      AL1(208)
0000D1 D1                           226+          DC      AL1(209)
0000D2 D2                           227+          DC      AL1(210)
0000D3 D3                           228+          DC      AL1(211)
0000D4 D4                           229+          DC      AL1(212)
0000D5 D5                           230+          DC      AL1(213)
0000D6 D6                           231+          DC      AL1(214)
0000D7 D7                           232+          DC      AL1(215)
0000D8 D8                           233+          DC      AL1(216)
```

```
TRANSLATE TABLE - BLANKS TO PERIODS                                                                          PAGE    5

  LOC  OBJECT CODE    ADDR1 ADDR2  STMT    SOURCE STATEMENT                                                 F01FEB73  9/03/74

0000D9 D9                          234+          DC    AL1(217)
0000DA DA                          235+          DC    AL1(218)
0000DB DB                          236+          DC    AL1(219)
0000DC DC                          237+          DC    AL1(220)
0000DD DD                          238+          DC    AL1(221)
0000DE DE                          239+          DC    AL1(222)
0000DF DF                          240+          DC    AL1(223)
0000E0 E0                          241+          DC    AL1(224)
0000E1 E1                          242+          DC    AL1(225)
0000E2 E2                          243+          DC    AL1(226)
0000E3 E3                          244+          DC    AL1(227)
0000E4 E4                          245+          DC    AL1(228)
0000E5 E5                          246+          DC    AL1(229)
0000E6 E6                          247+          DC    AL1(230)
0000E7 E7                          248+          DC    AL1(231)
0000E8 E8                          249+          DC    AL1(232)
0000E9 E9                          250+          DC    AL1(233)
0000EA EA                          251+          DC    AL1(234)
0000EB EB                          252+          DC    AL1(235)
0000EC EC                          253+          DC    AL1(236)
0000ED ED                          254+          DC    AL1(237)
0000EE EE                          255+          DC    AL1(238)
0000EF EF                          256+          DC    AL1(239)
0000F0 F0                          257+          DC    AL1(240)
0000F1 F1                          258+          DC    AL1(241)
0000F2 F2                          259+          DC    AL1(242)
0000F3 F3                          260+          DC    AL1(243)
0000F4 F4                          261+          DC    AL1(244)
0000F5 F5                          262+          DC    AL1(245)
0000F6 F6                          263+          DC    AL1(246)
0000F7 F7                          264+          DC    AL1(247)
0000F8 F8                          265+          DC    AL1(248)
0000F9 F9                          266+          DC    AL1(249)
0000FA FA                          267+          DC    AL1(250)
0000FB FB                          268+          DC    AL1(251)
0000FC FC                          269+          DC    AL1(252)
0000FD FD                          270+          DC    AL1(253)
0000FE FE                          271+          DC    AL1(254)
0000FF FF                          272+          DC    AL1(255)

000040                             274           ORG   TABLE+C' '
000040 4B                          275           DC    C'.'                  PATCH BLANK TO PERIOD
000100                             276           ORG   TABLE+256             ORG BACK TO THE END OF THE TABLE
                                   277           END
```

09/11/74 AUTOFLOW CHART SET - PAGE 01

CHART TITLE - 'TRANSLATION ROUTINE TO CONVERT BLANKS TO PERIODS'

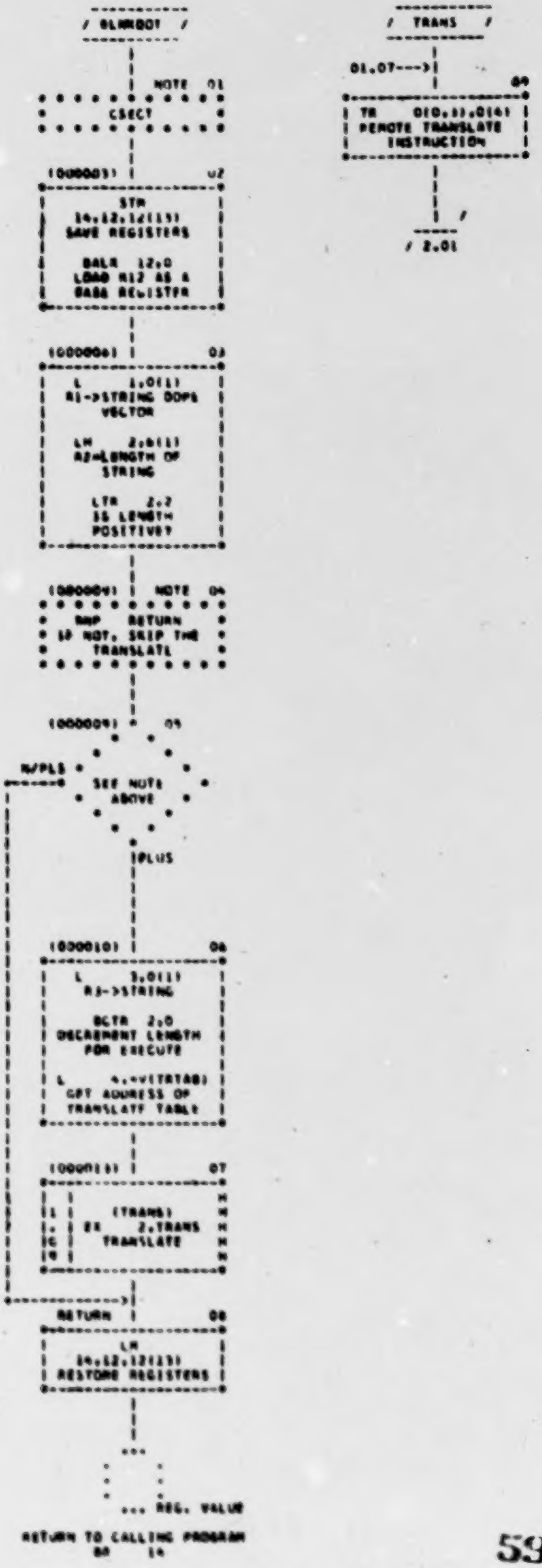
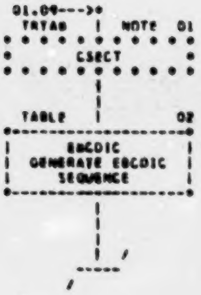

BLNKDOT
NOTE 01
CSECT
(000003) 02
STM
14,12,12(13)
SAVE REGISTERS
BALR 12,0
LOAD R12 AS A
BASE REGISTER
(000006) 03
L 1,0(1)
R1->STRING DOPE
VECTOR
LH 2,6(1)
R2=LENGTH OF
STRING
LTR 2,2
IS LENGTH
POSITIVE?
(000009) NOTE 04
BNP RETURN
IF NOT, SKIP THE
TRANSLATE
(000009) 05
N/PLS
SEE NOTE
ABOVE
PLUS
(000010) 06
L 3,0(1)
R3->STRING
BCTR 2,0
DECREMENT LENGTH
FOR EXECUTE
L 4,=V(TRTAB)
GET ADDRESS OF
TRANSLATE TABLE
(000013) 07
L
.
C
N
(TRANS)
EX 2,TRANS
TRANSLATE
RETURN 08
LM
14,12,12(13)
RESTORE REGISTERS
... REG. VALUE
RETURN TO CALLING PROGRAM
BR 14
TRANS
01.07--->
09
TR 0(0,3),0(4)
REMOTE TRANSLATE
INSTRUCTION
2.01

CHART TITLE - 'TRANSLATE TABLE - BLANKS TO PERIODS'

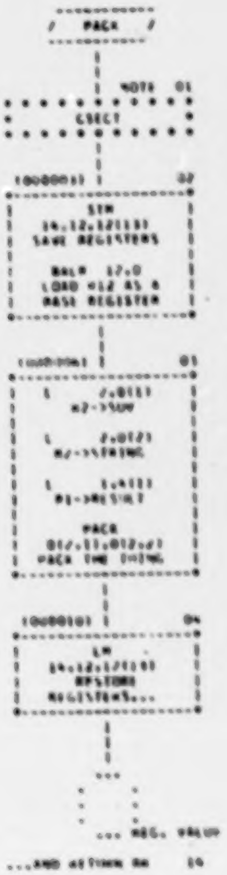

01.09--->
TRTAB
NOTE 01
CSECT
TABLE
02
EBCDIC
GENERATE EBCDIC
SEQUENCE

```
        ROUTINE TO PACK RELATED COURSE GROUP                                                                    PAGE    1

  LOC  OBJECT CODE    ADDR1 ADDR2  STMT   SOURCE STATEMENT                                               F01FEB73   9/29/74

000000                                2 PACK     CSECT
000000 90EC D00C            0000C     3          STM   14,12,12(13)         SAVE REGISTERS
000004 05C0                           4          BALR  12,0                 LOAD R12 AS A BASE REGISTER
000006                                5          USING *,12
000006 5821 0000            00000     6          L     2,0(1)               R2->SDV
00000A 5822 0000            00000     7          L     2,0(2)               R2->STRING
00000E 5811 0004            00004     8          L     1,4(1)               R1->RESULT
000012 F211 1000 2000 00000 00000     9          PACK  0(2,1),0(2,2)        PACK THE THING
000018 98EC D00C            0000C    10          LM    14,12,12(13)         RESTORE REGISTERS...
00001C 07FE                          11          BR    14                   ...AND RETURN
                                     12          END
```

CHART TITLE - 'ROUTINE TO PACK RELATED COURSE GROUP'

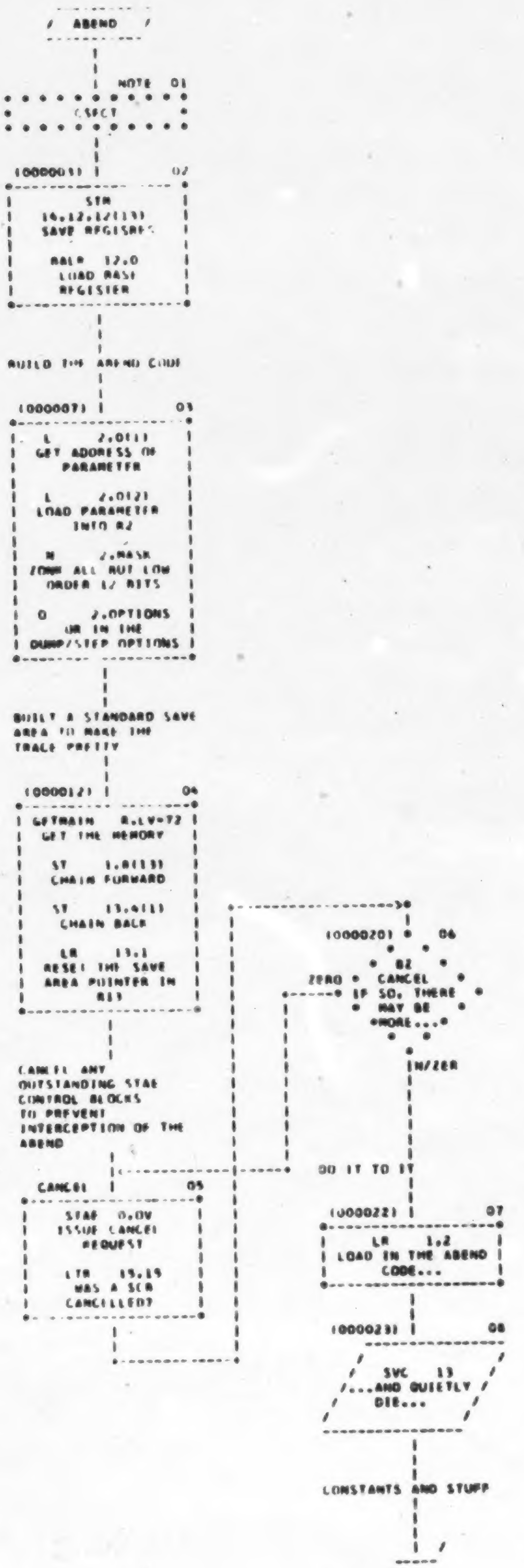

PACK
NOTE 01
CSECT
(000000) 02
STM
14,12,12(13)
SAVE REGISTERS
BALR 12,0
LOAD R12 AS A
BASE REGISTER
(000004) 03
L 2,0(1)
R2->SUM
L 3,0(2)
R3->STRING
L 1,4(1)
R1->RESULT
PACK
0(2,1),0(2,3)
PACK THE THING
(000010) 04
LM
14,12,12(13)
RESTORE
REGISTERS...
... REG. VALUE
...AND RETURN RR 14

```
      PL/I ABEND ROUTINE                                                                                          PAGE    1

  LOC  OBJECT CODE    ADDR1 ADDR2  STMT   SOURCE STATEMENT                                                F01FEB73   9/09/74

000000                                2 ABEND    CSECT
000000 90EC D00C            0000C     3          STM    14,12,12(13)         SAVE REGISRES
000004 05C0                           4          BALR   12,0                 LOAD BASE REGISTER
000006                                5          USING  *,12
                                      6 *        BUILD THE ABEND CODE
000006 5821 0000            00000     7          L      2,0(1)               GET ADDRESS OF PARAMETER
00000A 5822 0000            00000     8          L      2,0(2)               LOAD PARAMETER INTO R2
00000E 5420 C036            0003C     9          N      2,MASK               ZONK ALL BUT LOW ORDER 12 BITS
000012 5620 C03A            00040    10          O      2,OPTIONS            OR IN THE DUMP/STEP OPTIONS
                                     11 *        BUILT A STANDARD SAVE AREA TO MAKE THE TRACE PRETTY
                                     12          GETMAIN   R,LV=72           GET THE MEMORY
000016 4100 0048            00048    13+         LA     0,72(0,0) LOAD LENGTH
00001A 4510 C01A            0001E    14+         BAL    1,*+4 INDICATE GETMAIN
00001E 0A0A                          15+         SVC    10 ISSUE GETMAIN SVC
000020 5010 D008            00008    16          ST     1,8(13)              CHAIN FORWARD
000024 5001 0004            00004    17          ST     13,4(1)              CHAIN BACK
000028 18D1                          18          LR     13,1                 RESET THE SAVE AREA POINTER IN R13
                                     19 *        CANCEL ANY OUTSTANDING STAE CONTROL BLOCKS
                                     20 *        TO PREVENT INTERCEPTION OF THE ABEND
                                     21 CANCEL   STAE   0,OV                 ISSUE CANCEL REQUEST
00002A                               22+CANCEL   DS     0H
00002A 4100 0004            00004    23+         LA     0,4 .                     INDICATE CANCEL OPTION
00002E 0A3C                          24+         SVC    60 .                     ISSUE STAE SVC
000030 12FF                          25          LTR    15,15                WAS A SCB CANCELLED?
000032 4780 C024            0002A    26          BZ     CANCEL               IF SO, THERE MAY BE MORE...
                                     27 *        DO IT TO IT
000036 1812                          28          LR     1,2                  LOAD IN THE ABEND CODE...
000038 0A0D                          29          SVC    13                   ...AND QUIETLY DIE...
                                     30 *        CONSTANTS AND STUFF
00003C                               31          DS     0F                   FORCE ALIGNMENT
00003C 00000FFF                      32 MASK     DC     XL4'00000FFF'
000040 C0000000                      33 OPTIONS  DC     XL4'C0000000'
000000                               34          END    ABEND
```

CHART TITLE - 'PL/1 ABEND ROUTINE'


ABEND
NOTE 01
CSECT
(000003) 02
STM 14,12,12(13)
SAVE REGISRES
BALR 12,0
LOAD BASE REGISTER
BUILD THE ABEND CODE
(000007) 03
L 2,0(1)
GET ADDRESS OF PARAMETER
L 2,0(2)
LOAD PARAMETER INTO R2
N 2,MASK
ZONK ALL BUT LOW ORDER 12 BITS
O 2,OPTIONS
OR IN THE DUMP/STEP OPTIONS
BUILT A STANDARD SAVE AREA TO MAKE THE TRACE PRETTY
(000012) 04
GETMAIN R,LV=72
GET THE MEMORY
ST 1,8(13)
CHAIN FORWARD
ST 13,4(1)
CHAIN BACK
LR 13,1
RESET THE SAVE AREA POINTER IN R13
CANCEL ANY OUTSTANDING STAE CONTROL BLOCKS TO PREVENT INTERCEPTION OF THE ABEND
CANCEL 05
STAE 0,OV
ISSUE CANCEL REQUEST
LTR 15,15
WAS A SCB CANCELLED?
(000020) 06
BZ CANCEL
IF SO, THERE MAY BE MORE...
ZERO
N/ZER
DO IT TO IT
(000022) 07
LR 1,2
LOAD IN THE ABEND CODE...
(000023) 08
SVC 13
...AND QUIETLY DIE...
CONSTANTS AND STUFF

604

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5. AUTHOR(S) (First name, middle initial, last name)

Mr. Harold J. Bellamy
Mr. Kenneth V. Branch
Mr. Larry R. Duffy
Mr. Charles G. Edison
Mr. Robert E. Hallman
Mr. Ronald E. Yanko

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13. ABSTRACT

This report consists of three volumes: Volume I presents an overview of the activities that comprised the design and development effort for the three Design of Training Systems computer-based models, a description of the validation process, and the long-range implications of the development of an operational system of DOTS models.

Volume II presents a detailed description of the System Capabilities/Requirements and Resources model, the Educational Technology Evaluation model, and the Training Process Flow model. Model logic design, input/output parameters, and data base communications are discussed at a level which allows an analytical evaluation of each model's design. In addition, Level I validation scenarios are presented in sufficient detail to allow their duplication if desired.

Volume III contains the model and data base program descriptions and operating procedures. Flow charts and program listings for the models, interface programs, and the data base applications programs are presented in appropriate sections.

The results of Phase II indicate that the selected modeling applications are feasible. The models' validation demonstrated response to realistic system variable parameters. It was concluded that the system of DOTS models is implementable and will indeed represent a significant training cost savings.

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